The Bradshaw Lecture
ON
PROGNOSIS IN HEART DISEASE.

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BY E. MARKHAM SKERRITT, M.D.,
F.R.C.P. LOND.,
PROFESSOR OF MEDICINE IN UNIVERSITY COLLEGE, BRISTOL; SENIOR PHYSICIAN TO THE BRISTOL GENERAL HOSPITAL; FELLOW OF UNIVERSITY COLLEGE, LONDON.

MR. PRESIDENT AND GENTLEMEN,—It is probably the wont of those upon whom from time to time devolves the responsibility of delivering the lectures associated with this College to select for their discourse matters to which they have devoted special consideration, or which are to them invested with peculiar interest. Therefore when you, Sir, did me the altogether unexpected honour to invite me to deliver the Bradshaw Lecture for the present year it seemed to me that I could but discharge the important duty with which I was entrusted by treating of some subject which had been in the forefront of my observation and thought during my active professional life, and my choice fell upon a theme which has also engaged the attention of those who have spoken with an authority to which it is not for me to aspire—one, however, which in its importance is always fresh, and is constantly present to the practical physician, offering for his solution ever-varying problems.

The Father of Medicine has said, "The art of physic is of great extent, life short, opportunity slippery, experience fallacious, and judgment difficult." Still but too true of our art as a whole, this applies with equal force to one at least of its branches. Who is there that of his own experience cannot say of prognosis in disease that "opportunity is slippery, experience fallacious, and judgment difficult"? And assuredly a full share of difficulty and fallacy surrounds the subject which I have chosen for this lecture, for although in none of the ills which flesh is heir to is a knowledge of what the future has in store of greater moment than in heart disease, yet in few things is the possible margin of error so wide. It is not practicable within the time at my disposal to enter into a detailed consideration of the prognosis of heart disease in its various forms. Nor should I here venture to trespass upon ground which has before been occupied by those with whom I could not presume to compete. I propose rather to treat the subject from a general point of view and to discuss it in certain aspects and phases, having especial regard to the origin and nature of some of the uncertainties by which it is surrounded.

The following factors enter into prognosis in heart disease. First, an accurate estimate of the nature and extent of the changes which have occurred in a given case—that is to say, a complete diagnosis. Next, a knowledge of its past history with special reference to the causation of the cardiac trouble and the length of time that it has existed. Thirdly, an acquaintance with the course that may be run by a lesion such as is present. And lastly, a due weighing of the special features of the case in question.

There is no need to argue at length the dependence of prognosis upon diagnosis. If diagnosis is imperfect or faulty or totally wrong prognosis will be correspondingly erroneous. The foundation of prognosis is an accurate appreciation of the changes produced by disease and of the pathological nature of the processes concerned—a knowledge, that is to say, not only of what alterations have occurred in shape or size or structure or function of an organ or part, but of how they have been caused, and what is the ultimate history of the morbid agencies to which they are due. Where the heart is concerned error in prognosis may arise in connexion with either of these two factors; on the one hand, through mistake as to the actual physical condition of the organ; on the other hand, owing to failure to realise what will be the resultant of the various forces which are rightly recognised as at work. And difficulty in these two directions tends rather to lie towards the extremes of age. In early life the discovery of the lesion is usually easy, but there are wide possibilities as to its future course, while with advancing years comes the time of degeneration, which in its gravest forms often cannot with certainty be recognised. For youth is the period of acute inflammations—of pericarditis and endocarditis—which are commonly discovered with ease by the skilled observer; but no wisdom will avail to surely foretell the future whilst acute endocarditis is running its course. Whether when the inflammation subsides the roughened valve will be smoothed and that unusual event occur, the disappearance of the murmur of acute endocarditis; or the morbid sound persist, but based on so little actual valve change as to remain a murmur and nothing more; or whether the lesion is destined to work havoc with the heart and bring life to a speedy close,—all this is beyond the reach of human foresight. Diagnosis is simple, definite prognosis impossible. Towards the other end of life the opposite tends to obtain. Degeneration has no distinctive physical signs; and it often cannot be said with certainty whether the halting action of the organ is due to change which is organic and will remain or comes from simple and remediable weakness. Upon the view that is taken of the nature of the affection depends the prognosis that is given; on the one hand, a grave forecast of increasingly impending evil; on the other hand, it may be, the prospect of restored powers and lengthened years. But perchance the promise of peace and length of days is made to the man whose heart is changing into fat, while the sword is hung over one whose only need is nourishment and rest.

It is important to recognise what is the position of physical signs in heart disease—how far they can be relied upon as evidence of the nature and extent of existing morbid changes and of their tendencies. Speaking of valvular disease Markham[1] says: "A too curious investigation of physical signs is apt here, as in the case of all other diseases where physical diagnosis is concerned, to make the observer less attentive to the general signs and symptoms than their real importance demands." And Wardrop[2] expresses his views in still stronger terms: "How many examples of erroneous prognosis do we not all meet with? And I am convinced that nothing has contributed more to extend this humiliating catalogue than the introduction of auscultation." It is needless to say that the stethoscope does not merit such sweeping condemnation. And yet it cannot be denied that many of the errors made in the prognosis of heart disease—and especially of valvular lesions—arise from too narrow a reliance upon its indications. The stethoscope will discover the "physical sign proper," the murmurs, and therefore decide to which of the various classes of valvular defect any case belongs, and by placing it in this category or in that determine what are the usual tendencies of the affection. But here its function ends; beyond this it does no indicate what is in store for the particular patient. It is well known that the quality of a murmur is no guide to the amount of valvular mischief which exists. For while the loudest murmur may remain for many years with quite unimportant results the effects of a valvular lesion may sometimes be too grave for the production of a murmur at all. But we cannot adopt Latham's dictum,[3] that "as a very general fact the louder the endocardial murmur the less is the amount of valvular impediment." There is in truth no rule in either direction, but each case stands by itself.

A true estimate of the gravity of a lesion can only be gained by a general survey of the case in the broadest possible light; to determine, first, what has been its effect upon the heart itself, and then how far its influence has extended beyond this organ. If it is found that a murmur is present—no matter at which orifice—and that there is no change in that part of the heart upon which the strain first comes, and if it is also known that this murmur has existed long enough for the effects of increased work to be manifested, then it follows that the lesion is trivial and stationary and may remain so for an indefinite time. On the other hand, if hypertrophy or dilatation, or both, exist, their degree is a test of the actual interference with the heart in its work. Due weight is also given to the character of the pulse and to symptoms such as

[1] Diseases of the Heart, second edition, p. 106.
[2] Diseases of the Heart, p. 283.
[3] Diseases of the Heart (New Sydenham Society), p. 275.

dyspnœa or palpitation or syncope, and to any evidence of interference with the pulmonary or the systemic circulation or of the presence of associated disease. It is, however, necessary not only thus to check the special physical signs of valvular disease, but also sometimes to estimate the value of symptoms by physical signs. When this happens it is usually in young patients who are far removed from the class to which I shall next refer. A short time since I had under observation a young man who suffered from most alarming cardiac symptoms, of which a very grave view had been taken, frequent attacks of palpitation and dyspnœa with tendency to syncope being associated with a mitral systolic murmur and a moderate amount of dilated hypertrophy. Betweenwhiles, however, the heart was capable of steady and efficient contraction. It appeared to me that the phenomena were serious, out of proportion to the actual degree to which the organ was affected, and that the outlook was therefore favourable as to both the danger of the paroxysms and the prospect of ultimate improvement, and I am informed that time has shown the truth of this conclusion.

I have referred to conditions in which the physical signs may attract more attention than is their due. There is an opposite group, especially associated with advancing years, where they are apt to be by no means proportionate to the gravity of the actual state. In this case an intelligent consideration of the symptoms is essential, since they are of greater importance than the physical signs. For instance, a man beyond middle life, whose general nutrition is failing, suffers from shortness of breath and a tendency to palpitation. The heart's action is found to be somewhat feeble, and that is all. And yet fatty degeneration exists, from which the patient may at any moment die.

The importance of history, the second factor in prognosis, is never underrated by the practical physician. By it are determined the origin of any morbid state, the length of time that it has existed, and its tendency to development in one direction or in another, and an accurate appreciation of the information which it conveys is of the greatest value. Where valvular defect is due to acute endocarditis it is important to know whether there is a liability to a fresh onset of the malady in which it originated. For instance, when endocarditis arises during the course of an acute specific disease such as scarlet fever, which usually makes one attack only, the prospect is better than in the case of acute rheumatism, where recurrence is common, and often lights up fresh endocardial inflammation. Or the history shows that a murmur may be due, not to endocarditis, but to weakness of heart following acute illness or originating in anæmia, in which event there is a reasonable prospect of cure. Or the course is perhaps preventable or more or less removable, as when avoidable muscular strain produces cardiac dilatation. Or it is a diathetic condition, such as gout, which can be kept in check, but not eradicated. Or the affection may originate in a persistent and irremediable condition, as when dilated hypertrophy results from chronic Bright's disease or from the arterial degeneration of age. In every case a recognition of the cause of a cardiac lesion, and therefore of the degree to which it may be influenced or removed, enters into a rational prognosis.

It is difficult to over-estimate the value of a knowledge of the length of time that a heart lesion has existed. I will illustrate this point in the case of acute endocarditis. It has been pointed out that it is impossible to determine during an attack of this inflammation what will be its ultimate outcome. Walsh[4] says: "Viewing all forms of valvular impediment as a single group, it is not possible to make any statement of the least utility on the question of duration. Nay, even if any individual disease of the whole number be selected the extremes of brief and of protracted course are found to lie so widely apart that it becomes practically useless to strike a mean. ..... We must be content to register the unexplained truth that all forms of valvular disease, may, on the one hand, prove the main instruments in rapidly killing, or, on the other, remain for a well-nigh indefinite period subjectively latent." And with this Latham's testimony accords[5]: "Such cases as have fallen in my way have taught me that the period to which life may be continued is very various. It may be a few months only, or a few years, or it may be for many years, even ten or twenty or thirty. Of these facts I am certain, but I cannot array them numerically and statistically; and because I cannot I can determine no relative proportion between those who survive months and those who survive years, or those who survive few years and those who survive many, yet the facts are sure." Walsh is unable to account for so wide a divergence, but Latham's explanation is as follows[6]: "When the heart is left in a state of unsoundness from past inflammation two principal consequences are to be expected—either there may be a renewal of inflammation in the unrepaired structure, or this remaining as it was left may become the element of further material changes in the whole organ. ..... The latter consist in alterations of bulk and size and shape and capacity, no other causes being engaged in bringing them about than those which are constantly at work in the healthy heart—namely, its own vital movements; only they are now at work with more or less energy than is either natural or healthy or they are at work without their natural and healthy harmony."

Considered from the point of view of pathological anatomy the result in acute endocarditis may be as follows. First, resolution, with removal of the products of inflammation and consequent disappearance of all abnormal physical signs. I believe this to be one mode of termination although this view is not universally held. Walsh[7] says: "An indubitable endocardial murmur, holding on from the beginning to the end of the acute disease, never, so far as I have known, totally disappears in after life." It will be allowed that murmurs are sometimes met with having all the characters of those due to endocarditis, and that they may disappear with convalescence from the fever or comparatively soon afterwards. I have myself met with what I have believed to be instances of this complete recovery. It has been urged that because the murmur does not persist therefore it cannot be due to inflammation. This important point is well argued by Byrom Bramwell,[8] who arrives at the conclusion in which I have expressed my own belief. Latham,[9] indeed, asserts that out of a series of 63 cases of rheumatic endocarditis "perfect reparation occurred in 17; for in these the murmur ceased entirely." And Gibson[10] records the recoveries from mitral endocarditis as 25 out of 51. This is so large a proportion that the doubt arises whether in some the murmur was not due to a cause other than inflammation of the endocardium. Resolution then being recognised as one mode of termination of acute endocarditis, undoubtedly a more usual result is the subsidence of inflammation but the persistence of its products. The young connective tissue growth in the affected portion of the endocardium goes through the same changes which occur in similar tissue elsewhere; it matures into fibrous tissue, which as it develops tends to contract, and therefore the valve-segments become more or less thickened, and perhaps distorted to such a degree that their function is permanently interfered with.

Pathologically, therefore, the result in all hearts thus affected is the same—the persistence of the matured products of inflammation. But the practical difference between one heart and another is great. In the one, perhaps, "a little ridge on the surface of a valve, a little granulation on its free edge, a little thickening or shortening of a tendinous cord"—possibly so slight a change that, though permanently marked by inflamation, the valve is practically perfect and no murmur exists, anyhow too trivial to give rise to definite interference with the function of the organ. In the other the self-same morbid process results in some valvular deformity, forming an obstacle before which the heart speedily fails. Pathologically identical, the outcome of the same affection, clinically the position of these two hearts is widely different. "The renewal of inflammation in the unrepaired structure" may occur in one of two ways—either by repeated attacks of acute inflammation similar to the first or by the passage of endocarditis from the acute form into the chronic. Latham[11] says: "When acute rheumatism has been once suffered in early life there is a fearful likelihood that it will be oftentimes suffered again. Moreover, the first attack is generally the type of every attack which is to follow; they will all take the same course and involve the same structures. If the first involve the heart, so probably will they all."

[4] Diseases of the Heart, fourth edition, p. 292.
[5] Loc. cit., p. 241.
[6] Loc. cit., p. 296.
[7] Loc. cit., p. 258.
[8] Diseases of the Heart and Thoracic Aorta, p. 373.
[9] Loc. cit., p. 35.
[10] Reynolds's System of Medicine, vol. iv., p. 462.
[11] Loc. cit., p. 242.

No one will dispute the liability of acute rheumatism to recur. Yet in my own limited experience it is not very exceptional for this fever to attack a patient in early life and not again, although many years may have elapsed. For instance, the other day I saw a man, aged twenty-seven years, who had suffered from rheumatic fever once only at the age of three years; a loud aortic systolic murmur existed, but without symptoms. And exception may also be taken to Latham's second point—that the first attack involving the heart all the later will probably do so too. For I do not think that it is rare for acute rheumatism to recur without the renewal of endocarditis. This is a point upon which it is not easy to speak dogmatically owing to the difficulty in determining that the heart does remain free from fresh inflammation. But it is fair to infer that this is so when the disturbance of the organ is not out of proportion to the general symptoms of fever, and no changes can be recognised in the cardiac area either during the acute stage or afterwards.

Opinions differ as to the frequency with which acute endocarditis passes into chronic inflammation. Latham [12] says on this point: "This I believe to be a fact which, if not true in every instance, is true in the majority—namely, that after inflammation of the endocardium has ceased, whatever remnant of unsoundness is left it continues ever after without increase in its own kind. After the lapse of years the very appearance of all we find seems to testify that it has long been stationary ..... and when the results of clinical observation are compared with those of morbid anatomy they will be found to testify the same thing." This important question is not adequately discussed by pathologists. You, Sir, point out the reason for this when you say:[13] "Specimens of endocarditis in this early stage are frequent enough. But it is not easy to say what occurs next in the process because we do not have many opportunities of seeing the intermediate conditions between this which is found in cases of death from the acute disease which causes the endocarditis and that advanced state of change in the valves which long afterwards proves fatal by disabling them. It appears to us that in the interval between acute endocarditis of rheumatic fever and the death long after from valvular disease of the heart many frequent repetitions of the inflammation must occur. Sometimes we find inflammatory products of two distinct dates on the valves, some recent, some older. But more usually a chronic state of inflammatory irritation persists, slowly changing the valve." Judging by clinical evidence my own experience points to the view that both these things happen. While in many instances there is only too good reason to conclude that the mischief is progressive, yet in some acute endocarditis comes to a definite end and no further change takes place in the tissue which has been the seat of inflammation. I have met with many cases in which no perceptible alteration either in the character of the murmur or in the general state of the heart could be detected at successive examinations, in some instances extending over a considerable number of years. It is reasonable to conclude that if the condition of the organ is thus stationary from the clinical point of view it only remains structurally unaltered. On the other hand, instances are only too common in which it is plain that the valvular lesion is progressive, and where the obvious inference is that chronic endocarditis has carried on the work begun by the acute inflammation.

It has thus been seen that the results of acute endocarditis, both pathologically and clinically, may vary within the widest extremes, and that no data exist by which it can be foretold during an acute attack what will be the ultimate position of any given case. How, then, will this most important question be answered? The problem will be solved by time alone. Let me remind you of the statement which I have already made, that a knowledge of the length of time that a heart lesion has existed is of the greatest value in prognosis. Endocarditis must be estimated by the results which it produces—the damage which has been done to the heart in a given time is a test of what will happen in the future; and prognosis becomes a problem in proportion. What, then, are the indications that a condition is on the one hand grave in its tendencies and on the other unimportant? The only test is the degree to which the heart has become secondarily affected, the evidence showing that it is hampered in its work. The presence of hypertrophy, the existence of dilatation, and their amount, signs of defect in the conduct of the circulation in the lungs or in the systemic circuit,—these it has before been said are what have to be sought. Let it now be supposed that the patient comes under observation some considerable time after an attack of acute endocarditis—it may be twelve months or two years or longer—and that a murmur is present. Prognosis becomes, as has been said, a problem in proportion. If the heart is in a certain state at the end of a certain time, what will be its condition in six months or twelve months or in five or ten or twenty years? And the longer the interval that has elapsed since the acute inflammation the more certainly can this question be answered. If in the same period one patient has arrived at the stage of dropsical effusion, while another has a much enlarged heart which can still, however, overcome the obstacle to its work; and another is unconscious of disease, and there is but slight increase in cardiac size and strength; and in yet another, no change whatever has occurred, the inference is plain that as it has been in the past, so will it probably be in the future—disease that has advanced will continue to increase—that which has been quiescent will remain so still. And through the whole series the foundation of prognosis is time—time and the changes which it has wrought.

I will conclude the consideration of the position of history by reference to a case which well illustrates its importance. Nearly eight years ago I saw in consultation a patient who had been informed that he was suffering from aortic aneurysm. The existence of disease had been discovered by accident and had not before been suspected, the patient feeling in his usual health. I found a most intelligent man, fully able to grasp the bearings of all that was said respecting his condition. The heart was enormously enlarged and hypertrophied; the impulse was so forcible as to shake the chest-wall and could be plainly felt through the clothes. Although I was of opinion that the physical signs, into which I need not enter, did not justify the diagnosis of aneurysm, yet they were not such as altogether to negative its existence. But I was much struck with the point already mentioned—that the trouble had been discovered by accident and not from symptoms complained of by the patient, who was exceptionally intelligent and observant and had led an active life. It appeared to me that a lesion accompanied by cardiac action differing so markedly from the normal, if of recent origin, could not arise without attracting the attention of the patient; and on careful inquiry it came out that the strong beating of his heart had been noted in his early adult life; and, further, that when he was a little child his father once came into the nursery when the boy was undressed and observed something which led him to bring the family medical adviser, who examined the chest. I therefore concluded that the patient had grown up with the lesion that existed, so that to him it gave no abnormal sign. It followed that aneurysm, which would be a recent development, did not exist. The prognosis attaching to the latter being thus set aside the question arose as to what the future had in store. On the principle which has been already discussed it was argued that if compensation was so complete that the heart, although thus enormously enlarged, had been able through all these years to do its work in such a way that an active man had no suspicion that it was otherwise than normal, there was no reason why it should not long remain equally efficient. As a matter of interest, and as showing how inconclusive were the physical signs, I may add that as opinions so divergent were given upon a subject of such importance the patient was examined in London by two eminent authorities, one of whom came to the conclusion that aneurysm existed, while the other agreed with my view of the case. The patient, after hearing either diagnosis fully argued by its supporter, made up his mind that the balance of evidence was against the existence of aneurysm, and laid his plan of life accordingly. This was nearly eight years ago. I have examined him at intervals since and have been unable to detect any signs of advancing disease; he is not conscious of any trouble; he leads a busy and fairly active life and looks the picture of health. I have gone thus fully into this case because it is a forcible illustration of the value of a knowledge of the past as a guide to the present and the future. A most important decision turned upon the history, and the result has proved that reliance was rightly placed upon its indications.

An acquaintance with the course which is usually run by a given form of heart disease is one of the factors which have

[12] Loc. cit., p. 274.
[13] Wilks and Moxon: Pathological Anatomy, third edition, p. 134.

been enumerated as entering into prognosis. From what has already been said it will be plain that this knowledge often cannot be applied with sufficient accuracy to be of much value. It has been seen that in acute endocarditis it is practically useless for determining what will arise in a particular instance. Nor, viewing all forms of chronic valvular impediment, in whatever way originated, is it possible to make a statement with regard to any one of them that will necessarily hold good of a given case. A lesion that in one instance may end fatally within a few months may in another be consistent with long life and practically good health. It is, however, recognised that each form of valvular disease has certain general tendencies and that some of these are more serious than others. The relative gravity of valvular derangements is variously estimated by different authorities. Walsh[14] places them in the following descending series: tricuspid regurgitation, mitral regurgitation, aortic regurgitation, pulmonary constriction, and aortic constriction, tricuspid constriction and pulmonary regurgitation being too little known to be placed in position in the list. The worst results follow those lesions which directly obstruct the circulation behind them. Hence tricuspid regurgitation has the first place, hindering as it does the return of blood from the whole of the organs and tissues of the general circulation, the heart itself included. Similarly mitral disease, the two forms of which come next in the series, causes obstruction to the passage of blood from the lungs, and consequently tends to produce the whole series of pulmonary complications which are due to this back-pressure. On the other hand, lesions of the arterial orifices—the aortic and the pulmonary—so long as they exist alone, do not affect the circulations behind them, protected as they are by the auriculo-ventricular valves; and the result turns therefore solely on what effect is produced upon the ventricle itself and how far there is interference with the supply of blood to the artery. Apart from the liability to sudden death aortic regurgitation is much more serious than obstruction at the same orifice because of the tendency to over-distension of the ventricle during diastole. Of all valvular lesions aortic obstruction is the most favourable, the left ventricle frequently undergoing hypertrophy sufficient to overcome the obstacle at the orifice of the aorta. Pulmonary constriction has probably no more serious tendencies than aortic obstruction. It is well known that the sufferer from certain forms of valvular disease is placed in a better position, especially as regards the prolongation of life, by having one or more other forms of affection of the orifices added to that which already exists. For instance, there is less liability to sudden death in aortic regurgitation if it is associated with mitral incompetence. Probably the regurgitation through the mitral orifice during the systole of the ventricle lessens the amount of blood driven into the aorta, and therefore the quantity and force of that which distends the ventricle during the succeeding diastole. Another familiar illustration is afforded by the effect of tricuspid regurgitation in relieving the pressure on the pulmonary circulation caused by mitral disease. It has doubtless fallen to the lot of most to meet with cases in which urgent lung symptoms have been caused by the position of the pulmonary circulation between the obstruction to the onward flow due to affection of the mitral orifice on the one side and the increased *cis a tergo* of the hypertrophied right ventricle on the other. When at last the tricuspid valve gives way part of the force of the hypertrophied ventricle is now expended in returning blood into the auricle, and thus the tension in the pulmonary circuit is lessened and the urgent lung symptoms are relieved, though at great cost as regards the systemic circulation.

I have before pointed out that the prognosis of chronic valvular disease resulting from a non-recurrent specific fever is more favourable than that originating in acute rheumatism, inasmuch as further attacks of the latter may occur, bringing with them fresh risk to the heart But the prospect is better when the valvular change is due to the endocarditis of rheumatic fever than if it results from inflammation that is chronic from the first. For while the former may remain quiescent unless the valve is attacked afresh during a recurrence of the fever the latter is commonly due to some persistent cause leading to progressive inflammation with its increasing valvular deformity. An exemption may be made in the case of endocardial mischief arising in old people. In my experience it is here of little practical moment, slow in progress, and causing but slight disturbance in the function of the affected valve and altogether of secondary importance to the degenerative changes in the vascular system generally, of which it is a part.

Time fails me to dwell upon the cause of chronic degenerative changes occurring in the heart wall. When fatty degeneration—the most important of these—is once established it tends to increase owing to the persistence of its cause. Similarly no prolonged consideration can be devoted to the prognosis of hypertrophy and dilatation. Their fate is bound up with that of their cause. As this is usually persistent and often progressive the secondary cardiac enlargement is correspondingly permanent and tends to increase. The greater the hypertrophy in proportion to dilatation the better will the extra work be done and the difficulty be overcome. But only while the nutrition of the heart remains good. If the time comes that degeneration begins in the hypertrophied wall, the balance between work and power is disturbed never to be restored. This is so commonly illustrated in the late history of chronic Bright's disease. When renal inflammation becomes established in a patient whose nutrition is good the increased vascular tension is met by hypertrophy of the left ventricle, and the balance is thus so well maintained that the heart carries on with ease the greater work. But let the patient pass on to the time when the nutrition of the hypertrophied wall tends to fail; the strength of the heart is diminished while the calls upon it remain, and the symptoms of cardiac distress arise.

The liability to sudden death is an important aspect of prognosis. In the minds of the laity heart disease of every kind carries with it this awe-inspiring risk; and to inform a patient that his heart is not sound is to condemn him to a life of miserable uncertainty. The physician, however, knows that this danger attaches chiefly to certain forms of cardiac affection; it is therefore his duty to relieve the patient of the dread of this accident in any case when it is not likely to happen. Sudden death may occur in certain forms of chronic valvular disease, in dilatation, where degenerative changes exist, and from rupture of the heart or an aneurysm of this organ. It is well known that the lesion which carries with it by far the greatest risk of sudden death is aortic regurgitation. It is said by some authorities that this accident is liable to happen even when there is comparatively little regurgitation. Walsh[15] quotes a case in which there were absolutely no symptoms of disease, and there was neither hypertrophy nor dilatation of the ventricle, and yet the patient dropped down dead. He mentions, however, that the superficial pulses were markedly visible. In my own limited experience I have not seen the tendency to fatal syncope unless the regurgitation is considerable and the ventricle is correspondingly enlarged. It will be noted that in Walsh's case, while the ventricle is said to have been normal in size and force, the superficial pulses were markedly visible. I have never met with the characteristic pulse of aortic regurgitation when dilatation of the ventricle was not present, and on theoretical grounds it is not plain how a pulse indicating considerable regurgitation can exist while dilatation is absent, since the ventricle has to contain an increased amount of blood. Short of the existence of distinct secondary dilatation I should regard a patient with aortic regurgitation as safe from fatal syncope. On the other hand, it must be borne in mind that many in whom aortic regurgitation and its accompanying changes are extreme die, not suddenly, but by gradual increase of trouble. And, further, that there is less tendency to this mode of death when mitral regurgitation is added to aortic. One other valvular lesion sometimes ends abruptly, that is, mitral regurgitation. This does not often happen and is not to be feared unless compensation has failed. But that it may occur is impressed on my mind by the memory of an occasion when I discussed with a medical brother and the friends of the patient the course of life that should be followed, and death from syncope ensued within a short time of our leaving the house. The remaining varieties of valvular disease may be regarded as practically free from this risk. The same cannot, however, be said of dilatation, where the weak thinned wall sometimes unexpectedly ceases work.

It is, however, the degenerations which supply the majority of the instances of sudden death. Angina pectoris is notably a malady which tends to terminate in the way under consideration; and in fatal cases some change in

[14] Loc. cit., 392.

[15] Loc. cit., p. 394.

nutrition is practically always found — usually fatty degeneration of the muscular substance, and especially affection of the coronary arteries interfering with the nutrition of the heart wall. Fatty infiltration, if excessive, may end in sudden syncope; this is much more likely to happen in the weak heart of true fatty metamorphosis. But of all conditions the danger is most imminent when a degenerate heart has to face increased arterial tension. Here the type of cardiac action indicates the peril that threatens. The pulse is quickened; it may be irregular and intermittent or fairly regular, and is often of good value, but its notable feature is high tension. The short and toneless first sound of the heart is hurriedly followed by a ringing aortic sound. This kind of action marks a ventricle that can barely hold its own until the strain is taken off by the closure of the aortic valves, and it is plain that the patient lives on the brink of a precipice over which a trifling extra demand upon the heart may at any time determine his fall.

The last division of prognosis, which takes into consideration the special features of a given case, includes many factors, such as social status, sex, temperament, and general habits, and the condition of other organs; but their influence cannot be discussed in detail. Excepting the state of other viscera, perhaps the most important of these is position in life. If the sufferer from cardiac trouble can be placed in an environment as nearly ideal as is attainable by the lavish expenditure of care and money his prospects differ much from those of another who has to work for his bread in the station in life which he may chance to occupy when the malady overtakes him. This is exemplified in the case of acute endocarditis. I hold strongly that it is of the greatest importance to keep the heart as far as possible at rest for some considerable time after an attack of acute endocardial inflammation. Rest is the first essential to the cure of inflammation and the removal of its products. This is so obvious in the case, for instance, of a joint that it is always recognised, and the surgeon never grudges the time, however long, spent in the endeavour to secure a healthy limb. And it behoves the physician to keep just as clearly in view the state of the recently inflamed valve. When the social position of a child suffering from recent endocarditis will allow it is my practice to enjoin the retention of the recumbent position for from three to six months. After this, if the murmur persists, the gentlest exercise is gradually allowed; but for several years all violent exertion is forbidden. At the same time great attention is paid to the general health. The intelligent coöperation of the friends, and as far as possible of the little patient, is needed to the success of this method. But where it has been practicable I have seen reason to be well satisfied with the result. In the case of older patients the treatment is approximated to the above as closely as circumstances will allow. The prognosis of acute endocarditis much depends upon this one question, whether or no the heart can for some time be saved all but the "irreducible minimum" of work. Any trouble and pains are well expended that will lessen the prospect of valvular disease in after life.

Contrast with this the case of the hospital patient. The child or the young adult is treated for acute rheumatism accompanied by endocarditis, and the fever is quickly subdued. But the affected valve has not recovered its normal condition, even if active inflammation has subsided; it still remains a thickened and softened structure, ill fitted to withstand the pressure of the blood-stream. The whole future life may turn upon what the next few months will bring to this valve. And yet the exigencies of hospital work are such that the patient must be discharged when convalescent from the fever to take his chance with a still damaged valve. He receives excellent advice when he leaves; the boy must not do as boys are wont to do; the older patient is warned against those things which are placed in his way by his lot in life; the wise counsel is not followed, and the still softened valve gives way before the blood-current, or acute endocarditis becomes chronic inflammation, with its progressive increase of mischief. In heart disease there is more truth than is commonly the case in the saying that there is one law for the rich and another for the poor.

In conclusion, I am constrained to put forward a plea for mercy in the prognosis of heart disease. No one is exempt from the human attribute of liability to err. In the case of the physician this imperfection may be viewed in two aspects—as it affects his own reputation and in its influence upon the subject of his error. It is with the latter that I am now concerned. The philosopher Bacon might well have had in view the prognosis of heart disease when he counselled "not to engage a man's self peremptorily in anything, though it seem not liable to accident, but ever to have a window to fly out at or a way to retire." All must be familiar with instances of the occurrence of the unexpected. I remember a man, fifty-nine years of age, who was the subject of most pronounced valvular disease. When twenty years old he was warned that his life was in danger and at the age of forty years was condemned to die within the year. The other day I saw a young man who had a mere suspicion of aortic obstruction; ten years before it was said that he might die at any moment. Some twelve years ago I examined a child with marked mitral stenosis and dilated hypertrophy—such a condition as might well have led to an early catastrophe; she has grown into a well-developed young woman, who would not be suspected of the lesion she carries. A lady, aged eighty-four years, has suffered for nearly twenty years—sometimes in a most alarming form—from all the symptoms of cardiac weakness commonly associated with fatty degeneration, and she still lives.

The wider experience becomes the more does certainty give place to probability, and it is wise to give due weight even to possibilities. And especially should this be the case in dealing with disease of the heart, which carries with it to the sufferer the thought of constantly impending evil. It has been my lot from time to time to meet with those who have been told, as has been proved without sufficient reason, that some grave cardiac lesion existed. To restore hope to life, to give the patient to the full the benefit of such doubt as may attach to the nature of his condition and the uncertainty that too often attends the prediction of his future, surely this is not only justifiable but also right, and the lightening of the depressing influence of fear and dread will in itself tend to avert the danger that may threaten.

For the imperfect and inconsequent manner in which this lecture has been placed before you I crave your indulgence. I have touched only the borders of a subject whose importance deserves far abler treatment than it is mine to bestow.

Inaugural Address

ON

SOIL AND CIRCUMSTANCE IN THEIR CONTROL OF PATHOGENIC ORGANISMS.

Delivered before the Midland Medical Society on Oct. 21st, 1897,

BY SIR RICHARD T. THORNE, K.C.B., M.B. LOND., F.R.S.,

PRINCIPAL MEDICAL OFFICER TO THE LOCAL GOVERNMENT BOARD.

MR. PRESIDENT AND GENTLEMEN,—It has long been matter of observation amongst those who are accustomed to the investigation of causes of disease that certain infectious diseases tend to recur periodically, after intervals more or less long, in the same localities—whether these be houses, villages, or towns — under circumstances that can hardly be explained except on the assumption that the specific infections with which these diseases are associated have in such localities contrived to retain their vitality during the intervals and to maintain themselves outside the human body. These occurrences stand in striking contrast with other prevalences of the same diseases, often of equal virulence and extent, but which exhibit no tendency to recur; and the question naturally arises how such difference in the behaviour of disease can be explained.

Similarly, there are individuals who, on a single exposure to an infection, do not fail at once to contract the disease in question; whilst in contrast with these persons we know of individuals who are subjected to maintained risk and exposure of precisely the same sort, and who seem from the very first to possess a natural immunity against some

particular infection. To explain this by saying that in the one case there was a predisposition to the disease and that in the other case the predisposition was lacking is but to re-state the fact and to leave the problem unsolved. Hence here again some explanation of the observed difference has to be sought. Since we have come to learn that the specific infectious diseases are caused by the reception into the system of definite micro-organisms, each of which has its own life-history and physiological properties, and a number of which give evidence that their power of reproduction, their capacity for retaining certain definite characteristics, and even their ability to maintain their existence are dependent on their surroundings, it has become important to ascertain how far this question of surrounding serves to explain differences of behaviour in disease such as those to which I have referred.

The specific organisms of disease must be looked upon as subject to much the same laws as those to which the lower forms of plant life are subject. If they are under the influence of surroundings which supply all their wants they may be expected to flourish and to multiply; if some condition important to their well-being is lacking they may be expected to suffer diminution or even loss of some notable property, and to be modified accordingly; and if their surroundings are inimical in a higher sense of the term they may be unable even to maintain their vitality. The question of environment thus comes to be one of primary importance, and in referring to the influence of soil and circumstance in their control of pathogenic organisms I desire to include consideration of all the surroundings to which such organisms may come to be exposed, and to consider how diversity of soil and circumstance may tend to explain the different behaviour of infectious diseases as regards localities and individuals.

Permit me to be more precise in defining the position which I advance. In the decennium 1871–80 the county of Durham as a whole had a far higher rate of mortality from "fever"—mainly enteric fever—than that prevailing in any other part of England and Wales, and although a large and substantial diminution in this rate took place in that county, as it also did in England and Wales as a whole during the decennium 1881–90, yet Durham continued to maintain her pre-eminence in regard to death from "fever." This position of unenviable notoriety still belongs to the county of Durham; indeed, since the expiration of the last decennium the Registrar-General has drawn especial attention to the habitually recurring and undue prevalence of enteric fever in a tract of country including much of Durham and extending along the east side of northern England. There are counties in proximity to Durham in which during the same twenty years the "fever" death-rate has barely reached half that with which the Registration County of Durham has become identified. What are the characters of the soil—non-living or living—into which the pathogenic organism of enteric fever falls in many districts of Durham, which are lacking when the same disease occurs in neighbouring districts; what, in short, are the circumstances and surroundings which favour its life-processes so much in the one instance and which are only about half as potent in districts near at hand?

So, also, there are towns in different parts of England from which enteric fever is rarely absent and in which it periodically recurs as a somewhat wide prevalence or even in epidemic form; whilst, on the other hand, there are towns and communities of equal size near by, where the conditions by which imported infection is surrounded, and where the soil into which the pathogenic organism is received are inimical to its life-processes and where it soon dies out. It is not that the organism itself differs at the outset. Cases are known in which infection from a town which suffers habitually from enteric fever, but which—by reason perhaps of a wholesome water service—rarely suffers in epidemic form, is imported into another where the disease is rarely known; but gaining access to a public water service the result is a severe but an altogether transient epidemic. And, once more, I have known a house standing in large grounds to be smitten with enteric fever on three different occasions, the disease affecting in succession three different sets of tenants; and although between the second and the third occurrence the dwelling had been untenanted for nearly two years, yet the disease reappeared amongst the new tenants within a few weeks only of their occupation of the dwelling.

Soil, in its ordinary geological sense, has often been credited with having concern with persistence and recurrence of enteric fever, and since the discovery of the Eberth bacillus additional importance has come to be attached to this view. That bacillus, like other pathogenic organisms, is distinctly affected by its surroundings. Light does not favour its life-processes; direct sunlight is distinctly inimical to it; very high or low temperature affects its power of self-multiplication, especially when dryness is combined with the extremes of temperature; and there are some grounds for believing that it is not ordinarily capable of resisting for any long period of time submergence in water. Judging by analogy it must also be assumed that it requires its proper nutriment in order to thrive and to multiply.

Under these circumstances we can easily realise that the question of the maintenance or the destruction of this pathogenic organism outside the human body may largely come to depend upon the condition of the soil on which the excretory matters containing it may find themselves. On the one hand, a hard and somewhat impenetrable surface exposed to the sun and to a dry air as well as a soil which contains but little organic matter have often been assumed to be unfavourable to the extension of enteric fever; whereas, on the other hand, a loose and loamy soil, which is organically polluted and which at the same time permits the penetration of the organism and provides it with means of nourishment and a sufficiency of moisture, has been credited with the power of maintaining the vitality of the organism, of securing its multiplication, and of storing it up without its undergoing any material modification in its physiological properties, pending its entrance into the human subject as the result of its being washed into a well or being forced out of the soil into the surrounding air.

All this, however, had been matter of surmise, and it is only recently that any systematic attempt has been made to study how far conditions of soil are concerned in enhancing or in controlling the operations and properties of the enteric fever bacillus. Under these circumstances I last year procured the sanction of the President of the Local Government Board to commence sustained investigation of this subject. I was largely influenced in seeking this sanction by the consideration that in the Medical Department of the Local Government Board we had already procured valuable evidence in proof of the fact that the organism which in its life-processes in peaty soil is the ultimate cause of lead-poisoning which follows the consumption of certain moorland waters is in a high degree dependent for its vitality and its power for harmfulness upon the condition of the soil whence the waters in question are derived. Already some significant results have been obtained as the outcome of certain investigations which Dr. Sidney Martin has been carrying out for the Medical Department of the Local Government Board. These results will appear in detail in my official report for 1896–97, shortly to be issued, but in the meantime I may give a brief summary of that which has already been ascertained. Dr. Sidney Martin made one set of experiments with soils containing a large quantity of organic matter, some of these being derived from localities where enteric fever was wont to recrudesce from time to time. Having placed samples of these soils in flasks, and having completely sterilised them, he inoculated them with one and another culture of the typhoid bacillus, and examination of soils thus treated at intervals varying from about a fortnight to fifteen weeks showed that the bacilli had invariably retained their vitality, that in some cases the whole, and in others a part only, of the experimental soil had become pervaded by diffused growth of the bacilli; and that the extension of the growth bore relation to the temperature at which soil of this class was incubated, and also to the amount of moisture in the experimental soil. The important conclusion is, however, reached that under the conditions of a laboratory experiment soil such as that described affords, after complete sterilisation and at ordinary temperatures of the atmosphere, not only a medium in which the typhoid bacillus can retain its vitality, but one in which it is capable of multiplication and of spreading abroad. In the official report referred to, Dr. Sidney Martin only records the results of his experiments up to the end of March last, when his experience in this matter was limited to 105 days, or fifteen weeks; but his further investigations into this subject have already shown that in a soil such as that referred to the retention of vitality and the power of spreading abroad of the typhoid bacillus have been maintained at varying temperatures for periods of no less than 214 and 268 days—that is to say, some seven and nine months.

Dr. Martin next proceeded to make similar experiments

with two soils of quite different sorts. One was a firm, crumbling, peaty soil, and the other a red sandy soil from beneath the peat, both being collected at a distance from human habitations. These so-called "virgin" soils were first sterilised and then they were inoculated with culture of the typhoid bacillus in precisely the same way as had been practised with the organically polluted soils. Some samples were then inoculated at the temperature which had been found in earlier experiments to be most favourable to the growth of the bacillus in soil, other samples being kept at the ordinary temperature of the laboratory. The result was in striking contrast with that of the experiments carried out with the organically contaminated soil. In all the previous testings the typhoid bacillus had retained its vitality from the first, and in most of them there had been spread of the micro-organism from the centre of the soil, where the original inoculation had been made, to the periphery. But with both sets of these virgin soils no sign whatever of vitality could be discovered as the result of testings fourteen, twenty, and twenty-three days after the inoculations.

Thus far these experiments have only been carried out under laboratory conditions; they have had concern only with the vitality of the organism in its vegetative aspects; they have been carried out with sterilised soils, that is to say, soils where the typhoid bacillus was free from the influence—whether favourable or inimical—of other micro-organisms in the soil; therefore they will have to be repeated on a wider scale and under circumstances more nearly resembling those met with in nature, and they must take cognisance, not only of the vegetative properties, but also of the physiological and pathogenic properties of the organism. But in the meantime they are of marked value in connexion with the question to which I am addressing myself and they may serve to teach some useful lessons. Speaking always with a due sense of the restrictions imposed by the artificial character and the limited number of the experiments thus far reported on, I may fairly maintain that we have reason for inferring that whilst one soil and set of circumstances are highly favourable to the vitality and propagation of the typhoid bacillus, another soil and set of circumstances are rapidly destructive to it; and we seem to be upon the border of a territory where some vein of actual knowledge is likely to be discovered which will materially assist, not only in solving the problem of the different behaviour of enteric fever as regards its persistence and recurrence in one and another dwelling, town, or district, but of further emphasising the value of that practice which has now so long been adopted in this country for the prevention of typhoid fever.

In order to give a practical aspect to this question let me recall some of the circumstances of the soil and surroundings which we have learned by experiment to be favourable to the vitality and multiplication of the typhoid bacillus. They are that the soil should be pervious, that it should be permeated with a sufficiency of decaying—preferably animal—organic matters, that it should possess a certain amount of moisture, and that it should be subject to a certain temperature. And then let us consider what means can be adopted to deprive the soil of one or more of these conditions which appear to favour the retention of the vitality and power of multiplication of the typhoid bacillus, and to prevent that organism from gaining access to the soil in the neighbourhood of human dwellings. To this end I would in the first place advocate the paving of open spaces about dwellings where these open spaces are of small area and are liable to become contaminated with excreta. In this way fouling of, as well as penetration by a pathogenic micro-organism into, the underlying soil is practically prevented. Indeed, it is well known not only that the paving of yards about small cottage and tenement property in towns has in its results been shown to be a public health measure of first importance, but also that the value of such a measure has depended largely on the use of a form of pavement which really ensures impermeability. In the next place it will be clear that organic and decaying refuse should be so dealt with as to prevent its contaminating the soil in the neighbourhood either of dwellings or of sources of water-supply. I need hardly point out here in detail what are the points to aim at in securing this end; but I may perhaps usefully approach the matter from the other point of view, and say that the midden-privy which still prevails in so many of our large midland and northern towns presents every feature that should studiously be avoided. Generally sunk below the surface of the ground, often open to rainfall, always storing up decomposing excreta and refuse in close proximity to dwellings, it provides almost every condition favourable to the production of nuisance, to the saturation of soil with filth, and to the setting up and maintenance of those very conditions which seem to be essential to the vitality and multiplication of the typhoid bacillus. The fact that with our present knowledge such a structure as the common midden-privy should not only still exist in our midst, but be clung to with a perverted tenacity, is in my opinion the greatest blot which attaches to English sanitary administration at the close of the nineteenth century. Apart from its sanitary aspect it is a system as degrading and ignoble as it is foul, and I trust the day is not far distant when we shall look back to it as a barbarism of the past. Firstly, then, let our aim be to maintain such a condition of cleanliness about our houses that the soil shall approach as far as practicable to the condition of those virgin soils which are inimical to the growth of the pathogenic organism under consideration.

The next points are to deprive the soil in the immediate proximity of dwellings and of wells, so far as this may be practicable, of those conditions of moisture and temperature which we begin to perceive may tend most to the multiplication of the enteric fever organism. We have as yet but little precise information on these points; but if we may judge by the very partial and as yet incomplete experiments made by Dr. Sidney Martin in this matter we are led to the conclusion that a porous and organically contaminated soil to which moisture in the form of distilled water has been added to the extent of some 35 grammes per cent., and having a temperature of some 37° C. (103° F.), seemed best adapted to the growth and the spreading abroad of the typhoid bacillus. Any material modification in the amount of moisture, and, above all, any reduction of the temperature down to that which may ordinarily be expected in soil, tended at once to retard and to check the growth of this bacillus. In so far, then, as we may be able to control conditions of temperature and moisture in the soil in the immediate neighbourhood of groups of dwellings, to that extent we may be able to acquire some control over recurrences of enteric fever. Here again I would give prominence to the systematic paving of house yards with an impervious material. Where open spaces about dwellings are large, and where organic pollution of surface soil is practically absent, we may rely, as inhibitive of this bacillus, on the influence of sunlight and of alternating weather; but in our towns the conditions have become too artificial and the open area about dwellings has become too restricted for us to hope that under the unnatural conditions which have been inducedby urban aggregations of dwellings, we have any right to expect the full benefit of Nature's remedies.

My reference to the question of soil temperature leads me to make a few remarks on another disease which is periodically very prevalent in some of our large urban centres. I refer to epidemic summer diarrhœa, so fatal to infant life. There is strong presumption since the late Dr. Edward Ballard's researches that the question of "soil" is in this disease a most important factor, and that the essential cause of it is bound up with the life-processes of a micro-organism—not yet definitely differentiated—which exhibits its vital manifestations in the superficial layers of the earth. But here, again, the differing circumstances of the soil would seem to have a most important influence in determining whether the organism is to live and multiply or whether it is to be deprived of its power for mischief. When it gains access to a soil that is sufficiently loose to be permeable to air and water, and which contains a sufficiency of that organic matter which prevails so largely about the densely peopled areas of our large cities and towns, then the maintenance of its vegetative vitality is likely to be ensured; and when, in addition to this, it finds itself in the presence of a suitable temperature and moisture combined, then its power of rapid multiplication and its full pathogenic properties seem to be ensured. Dr. Ballard, as you are aware, has propounded the thesis that these requisites are pre-eminently present when the subsoil water stands sufficiently near the surface to maintain by capillary attraction a slight amount of dampness in the surface soil and when the temperature of the earth at a depth of four feet reaches 56° F. Then it is, in his view, that the organism can undergo most rapid multiplication; and becoming air-borne as the result of physical actions, such as the rise and fall of subsoil water it can gain access to

food supplies, and, above all, to the milk, which is so commonly stored for infants in miserable pantries opening out on to small confined areas and yard spaces, where emanations from filth accumulations blend with those forced out from the soil itself. In this way the organism finds, according to Dr. Ballard, an appropriate medium for undergoing those life-processes which end in the production of a virulent chemical poison. Milk thus infected may be deemed to constitute a common vehicle for conveying to the infant this poison, the results of which are so terribly fatal in some of our large towns.

As consistent with the view that the influence of soil is a prime factor in this disease I may say that there are instances of towns standing almost side by side which, in density of population, in trade and occupation, in climate and other like conditions, exhibit no appreciable difference, and yet whilst one town is notorious for its ever-recurring autumnal diarrhœa mortality, the other stands out with equal prominence by reason of its maintained comparative freedom from this fatal diarrhœa. The circumstances of soil in one place are to be thought of as responding to the requirements of the micro-organism; in the other as failing to respond to them.

Let us again seek some practical application of the results of this research. First and foremost stands the need of a soil that shall be maintained as free as practicable from organic contamination; and in the narrow and restricted open spaces about our city dwellings this means such disposal of excreta as shall be free from nuisance, such means of storage of all domestic refuse in receptacles of limited capacity as shall prevent contamination of soil and air and shall necessitate frequent, even daily, removal; and, once more, it means the provision of an impervious paving for yards and courts so as to protect the soil, not only from contamination, but also from exposure to that heat which, in combination with moisture, can serve as an incubating chamber for this virulent organism. There is a further practical application. It is this. Feed no infants artificially on milk that has not been quite recently boiled. I say "boiled," because in the houses of the poor sterilisation apart from boiling cannot be expected. But I would add there is no sterilising apparatus that can give results comparable with those provided by nature in the healthy female breast; and I would venture further to maintain that no milk from the mammary gland of its mother ever caused the death of an infant from this specific summer diarrhœa.

Thus far I have restricted my use of the word "soil" to its geological sense. But for the purposes of my subject it should be made to include all the circumstances and surroundings to which a pathogenic organism may be subjected and in which it may find, or fail to find, the necessary conditions for retaining its vitality and for reproducing its kind. It was in this more general sense of the term "soil" that I referred at the commencement of my address to the question of individual predisposition to disease. As regards a number of specific infectious diseases, such, for example, as tuberculosis and diphtheria, we know that many people at the same ages and under similar external conditions are either constantly or at frequently recurring intervals fully and, so far as we can judge, equally exposed to the pathogenic organisms with which these diseases are associated, and yet, whilst some succumb to them at once, others exhibit no susceptibility to them, this immunity extending at times over a long term of years or being even permanent. Such persons as the latter must obviously receive into them the specific organisms in like manner with their less fortunate fellows; indeed, the organisms in question may be actually found in them on precisely the same mucous and other surfaces as those wherein they begin their career of mischief in the so-called susceptible persons; but in the so-called non-susceptible persons the microbes lack some one or more conditions necessary to their disease-producing function. This difference between impotency and virulence in the organism is doubtless very largely a question of surrounding circumstances; indeed, it may be essentially one of the soil on to which it has fallen.

How many thousands of persons must have consumed tuberculous milk without ever having contracted tuberculosis, whilst how many must be the infants who doubtless acquire tuberculosis through the same medium during the very earliest days of their lives. Or, again, how common it is to find the bacillus diphtheriæ on the faucial mucous surfaces of nurses and other attendants in diphtheria wards, whilst these persons not only are, but remain, quite free from disease, whereas, on the other hand, how fatal to others is the reception of these bacilli under apparently similar circumstances. The question is, I believe, mainly a question of soil in the widest sense of that term. In the case of tuberculosis there are grounds for believing that when tubercle bacilli carried aerially impinge on the healthy mucous surfaces of the mouth and, above all, of the nares, they are not only largely arrested where they first impinge, but are also rendered impotent for harm by the physiological and chemical characters of the material with which they come into contact. Such as reach the stomach without such hindrance, whether swallowed with the saliva or received in food, have to contend with the gastric juice, which is probably sufficiently inimical to destroy or at least attenuate them if they are not excessive in number or of superabundant vitality. And, again, it is highly probable that these organisms rarely make their way into the human system through the digestive tract so long as that tract is covered with an unbroken, undamaged surface of normal mucous tissue. In short, the condition of health, in its widest sense, is inimical in its refractory and resistant sense, to pathogenic organisms, because the normal healthy tissues do not afford them the means of retaining their vitality and of facilitating the reproduction of their own kind. In this connexion it is also important to remember that in healthy tissues pathogenic organisms meet with vast numbers of cellular bodies which are normally present in them, that a struggle for existence then ensues, that the pathogenic bacilli are often devoured—by phagocytic action—by the normal phagocytes, leucocytes, &c., and that we largely owe our safety from disease to such antagonistic action of our tissues. Some organs of the body appear to have this work as their primary function. Thus the tonsils, standing as advance guards near the entrance of the respiratory and alimentary tract, must arrest many an organism that is carried to them aerially; and as regards such a disease as diphtheria I feel convinced that the difference between contracting the malady and not contracting it has largely to do with the condition of the surfaces of these organs. If the tonsils are uniformly healthy there is safety; if they are in an abnormal condition, as, for example, abraded, congested, or inflamed, there is risk. But the amount and the vigour of the infective bacilli received has probably also to be taken into account, for even granting the presence on a healthy surface and in a healthy gland of micro-organisms and cells that contend with and are antagonistic to pathogenic organisms, the first set may be overwhelmed by reason of both quantity and quality in the invading organism. It is circumstances such as these that must be regarded as having a very direct bearing in determining predisposition or susceptibility to infection on the one hand and so-called immunity, or absence of predisposition to infection, on the other hand; the two sets of individuals equally exposed to infection being apparently subject to the same risk. It is, in short, a mere matter of soil and circumstance.

My reference to diphtheria leads me to refer to two matters which have a direct bearing on the subject before us. I have been credited with the assertion that faulty sanitary circumstances have no place in the production of diphtheria. I am not aware when or where any such assertion was ever made by me. But I am free to admit that I do hold the opinion that diphtheria is not caused by sanitary circumstances, however faulty they may be, apart from the reception on to the fauces or other susceptible surface of the diphtheria bacillus; and I have a profound conviction that, subject to the limitations just indicated, the diphtheria bacillus does not retain its specific properties or undergo in its life-processes the changes necessary to the production of a specific toxin when it falls on a sound or healthy surface. On the other hand, I have expressed a very definite opinion to the effect that whatever produces an abnormal and unhealthy surface of the tonsils or other parts of the naso-pharyngeal tract tends directly to provide a soil which favours the retention, and perhaps the acquisition, by the diphtheria bacillus of those properties by which it produces disease and death in man. And I have, by way of illustration, specified two forms of throat ailment which, more than any others perhaps, favour an enhanced virulence and power of multiplication in the diphtheria organism—namely, that form of throat which so often follows inhalation of an organically contaminated air, vulgarly known as "drain-throat," and that condition of the fauces and nares which is so constantly found in scarlet fever convalescents and which is regarded as a part of that disease. Allow me to quote a few words from my

published Milroy Lectures[1] on this subject: "I am inclined very largely to limit the operation of faulty sanitary circumstances to the production of a morbid state of the fauces which induces a local condition favourable to the reception of the specific organism of diphtheria." And referring to a particular prevalence of diphtheria in a midland town I went on to say that given "that form of sore-throat often identified with drain effluvia ..... it needed but a resuscitation of the diphtheria infection in order to the specific inoculation of such throats. In short, I am inclined to regard the influence of a sewage polluted air as operating in much the same way as the scarlet fever poison, in so far as predisposition to diphtheria is concerned." The matter thus becomes one of soil, these two conditions of throat bringing about a localised set of circumstances which are favourable to the reception, to the vitality, and to the various life-processes of the bacillus diphtheriæ.

The other point to which I would advert is that apart from the immediate production of a disease as the result of the impact and lodgment of pathogenic organisms, the essential functional characteristics of those organisms are liable to be affected according to the circumstances in which they find themselves when they have fallen on one or other soil. A property—say the virulence—of the organism may entirely depend on the question of soil and circumstance; in the one case the specific virulence may be enhanced, in the other it may be attenuated or even destroyed. The result that is to ensue must depend on a multitude of circumstances. Concerning many of these we as yet understand but little; concerning many more we are in almost complete ignorance. But we already know that one set of—say pathogenic—organisms coming into conflict with another set of organisms find that their quality of virulence and power of multiplication are favoured and increased; whereas another set from the same source, but reaching another soil, may find themselves in conflict with other organisms that tend to their destruction, the two being mutually inhibitive. I have long maintained that the virulence and even the specific quality of an organism may be a matter of progressive development according to soil and surroundings, and some twenty years ago I compared the process of the evolution of the property of infectiveness to those processes by which definite properties in plant life, such as colour and perfume, can be produced and can be modified or allowed to lapse in the hands of skilled horticulturists or in nature according to the surroundings to which the living matter in question is exposed, "the affair being," as I then said, "essentially one of soil." At one time this view met with but little, if any, encouragement from certain teachers and students of bacteriology. They inclined to the view that the specific qualities of pathogenic organisms were stable and not subject to modification. But much in the epidemiological behaviour of different infections has tended to a quite different conclusion. In 1883 my colleague, Mr. W. H. Power, F.R.S., laid down certain propositions with regard to the cholera microbe—propositions which fell on many an unreceptive ear. He maintained that the cholera organism "has phases in its life-history during some of which it has not and in others it has the power of producing cholera"; and he further expressed the view that when once this exotic organism is no longer liable to the conditions—local or climatic, for example—which in its home were wont to favour the retention or enhancement of its "malignant phase," the general tendency of the organism was towards its non-malignant phase.

At the present moment we seem to be on the high road to an absolute confirmation of these views. Koch's cholera vibrio can be found in abundance in a state in which morphologically, and in most other respects, it is indistinguishable from that which is in direct causal relation to cholera, and yet the organism is impotent to produce that disease. Dr. Cautley, experimenting with the typhoid bacillus, finds that its power of survival in milk is dependent to some extent on the number of organisms normally to be found in milk. Thus in cold weather, when the micro-organisms commonly present in milk are least abundant, the typhoid bacillus survives longer than in warm weather. Here we have another indication of the manner in which a pathogenic organism is influenced according to the qualities of the soil and environment in which it finds itself, and incidentally we may have some explanation of the seasonal behaviour of enteric fever—a disease which is more prevalent in autumn and winter than in the summer.

I referred just now to the antagonism existing between tissue cells and pathogenic organisms. Study of this question has also included that of the influence which micro-organisms of different characters exert upon each other when they come into competition. To a large extent the investigations made have been concerned with pathogenic organisms, and some valuable results have been obtained. Thus Dr. Klein showed some six years ago that whilst with cultures of either the malignant œdema bacillus or of the bacillus of grouse disease fatal results were invariably obtained on the inoculation of mice with each separate infection, yet when cultures of these microbes were mingled together and the mixture was injected into mice, very few of them suffered any illness at all. Here we seem to have mutual inhibition between two sets of organisms, the contrary action of one and the other being brought about by the circumstances under which the one or the other set or both sets of organisms found themselves placed on injection into the body of the mice, the result being determined by the nature of the circumstances and surroundings to which the organisms were severally exposed. In other instances we know that a condition of antagonism is brought about when the inoculation of an animal with a specific and commonly fatal infection follows its inoculation by an antecedent infection. In this latter case it seems clear that the first inoculation has so modified the otherwise receptive soil into which the second infection is received as to modify or even destroy its virulence. On the other hand there are instances in which toxic bacteria or their products used in advance for inoculation purposes make the soil—in this case the body injected—more receptive than it otherwise would be of a second specific infection. The inability to produce disease which different specific micro-organisms often experience when they are received into the human body may well be believed to be in part due to the presence therein, and the antagonistic action, of other organisms which are associated with the condition we call health; whereas, on the other hand, organisms which are either associated with conditions of unhealthiness or are themselves the cause of a condition of ill-health may well be believed to have at times the power of enhancing and of adding to the virulence of specific organisms which come into competition with them. In this way immunity, special susceptibility, and predisposition come to be in each case essentially an affair of the soil and circumstances in which one and another specific organism finds itself placed. If we limit the term soil to its geological sense the same holds good. The natural soil teems with micro-organic life; one thimbleful of ordinary garden soil which has periodically received a manurial dressing will contain from one to three million micro-organisms, and a soil which has long been free from any artificial process of manuring still abounds in micro-organic life. These organisms in their life-processes tend to the modification and often to the destruction of extraneous organic matter. Experience shows how often micro-organisms endowed with mischievous qualities lose the power for harm on reaching certain soils. But the normal and harmless micro-organic constituents of the soil may be overcome by the abundance of extraneous organisms, such as those having pathogenic properties and which on occasion find their way into the soil, and then the latter may not only secure for themselves a medium for their reproduction and periodic activity, but their mischievous qualities may even be enhanced.

It may possibly be thought that in the remarks which I have addressed to you I have dealt too exclusively with considerations bearing upon the duties of those who concern themselves with matters affecting public rather than personal health. I trust this is not so. Whether we limit the use of the term "soil" to its geological sense, or whether we make it include every "circumstance" affecting man and his surroundings through which pathogenic organisms are wont to reach the human body, I know no influence that can better be exercised for good with respect to the protection of the individual and the home than the wise counsel of the habitual medical adviser. He above all others is free from the suspicion of advising merely on some general principles and for the benefit of the community at large rather than for that of the individual. The guidance of those whose counsel is sought and trusted at times of sickness is that which will best ensure for households and individuals that when the

[1] Diphtheria, its Natural History and Prevention; being the Milroy Lectures, 1891, pp. 89, 90.

struggle with specific infection comes it shall be successfully met; and this can only be when there shall be ready in advance that condition of healthiness in its widest application which would appear to be antagonistic to pathogenic organisms and inimical to those life-processes which conduce to the production of their toxic poisons.

Introductory Address

ON

THE NEURON AND ITS RELATION TO DISEASE.

Delivered at the National Hospital for the Paralysed and Epileptic on Oct. 5th, 1897,

BY SIR WILLIAM R. GOWERS, M.D., F.R.C.P. LOND., F.R.S.,

PHYSICIAN TO THE HOSPITAL; CONSULTING PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

GENTLEMEN,—It falls again to my lot to welcome you to the course of lectures by which we endeavour to increase the practical service of this hospital, by enlarging the knowledge and power of those who choose to avail themselves of the opportunity, and take the trouble of coming to receive its gift. We revert, moreover, to the former custom from which last year we departed, and interpose no pecuniary obstacle, except in the case of those whose object is to make it one of the steps by which they gain the portal to the practice of the profession. To all others we leave Nature to give, even from its disorder, such gift of knowledge as it may—with the freedom that is all its own. We strive to follow this example in what we do to help the receiver to receive. But let me remind you that in doing this we cast on you a duty. It is not fit that the institution should be the poorer in making you the richer. The arrangements necessary for you to learn are a constant cost, and the money once devoted to providing the means for teaching which this theatre affords, ought to yield the institution its due—at least, a minimum—interest. This can only be by a response from you by giving to its funds with the same freedom as you must feel in that for which your response is due.

Although the lecture I have the honour of giving you to-day differs from those that will follow it only in being the first, that which begins always seems to possess a certain degree of singularity, even sometimes in a way that involves some vague sense of analogy to greater importance. It is like a capital letter. I avoid saying "initial" letter because this takes our thoughts to the work of the early middle ages, and my only object is to state why I have taken the occasion as an opportunity for endeavouring to expound a general subject rather than explain a special case.

The subject is that which underlies the word "neuron." I do not know what conception you form on hearing the term, but I know what I may safely assume. I shall err only within narrow limits if I assume that, taking you as an aggregate, your conception is a negative one, and that you have no approximately adequate conception of what the word means. Familiar as some of you may be with the subject, it is certain that you have not all an equal knowledge or corresponding knowledge. My only secure course will be to assume the ignorance which Huxley said he had only once dismissed from his thoughts of an audience the most learned, and found he never had made so great a mistake. So bear with me if I thus weary those who do know something of the subject. You cannot know too much, for that which underlies the word is the most important addition to our knowledge of the nervous system, in its physiological and pathological relations, which has been made in the second half of this century—most important in the extent of its application and in the profoundness of its relations.

This revolutionary change in our conceptions is due to the use of silver; to the method of staining which is known as Golgi's method, because first devised in detail by Golgi of Pavia. Although silver has long been used as a stain, this is a method which has not been fully worked out before. It depends on the influence of silver on structure which has been acted on by chromium, and usually also by osmic acid. That which it does is to reveal in hitherto unknown distinctness the course and form of the processes of the nerve cells in the grey matter. These processes, as you know, divide. It has been hitherto believed that they join, and, joining, constitute continuous paths through the grey matter by which the nerve impulses pass from cell to cell, from group to group, and ultimately from one far-reaching fibre to another. And that which this method has shown is that union cannot be traced, but that which is everywhere to be perceived is that these branching processes, "dendrons" or "dendrites," as they are termed, end in the ground-substance or matrix[1] in which the cells lie. In this matrix only the dimmest trace of structure can be seen, and yet there must be an arrangement of its elements.

There is thus discontinuity where there was supposed to be continuity. All nerve fibres, as you know, are prolongations from nerve cells. They belong to the cell and are part of it, so that now there arises before us the vision of a series of discontinuous elements, each consisting of a cell with its processes, and the processes do not join. To each of these elements the term "neuron" has been applied. Yet the nerve impulses pass from one to another; they pass, therefore, by some unseen path through the matrix in which the processes end.

The term "neuron" was first used about eight years ago by Waldeyer, and it has become the universal designation, with a plural not according to the language from which the word arises, but according to the living language of the country in which it is used. We call them "neurons," the Germans call them "neuronen," and the French "neurones." I emphasise this because an attempt has been made to use the word in a more literally accurate sense. You know that there is from each nerve cell an axis-cylinder process as well as many or few branching processes; the branching processes are called "dendrons," and the axis-cylinder process is now termed the "axon." But that is the conspicuous nerve fibre; and since neuron means literally a nerve Professor Schäfer in his books, which are those used in all the elementary schools, uses the word "neuron" for "axon," and he has no other term for the whole cell than "cell." That, as you see, necessarily introduces considerable confusion, and it is an absolutely hopeless attempt to secure literal correspondence—hopeless because the word "neuron" has become established everywhere in a way which makes any attempt to change its use hopeless. I remember Sir William Jenner once saying: "Never attempt to change an established term merely because you can use another a little more accurately." That is wise advice; such attempts are seldom successful, and even if this were successful it is not worth while, for when a definite interpretation has got thoroughly attached to a word it is understood even though it may not be the literal meaning of the term. Where should we be if we were to put into literal language the ordinary terms in use? What a number we should have to discard. We should have to throw away "hysteria" to begin with. A number of other terms have grown up in connexion with the subject which are as yet not firmly settled, so I will give you as few as I can in this outline of the change in our knowledge in order that you may understand its application to disease.

Now, there is in connexion with this, although not directly resulting from it, a second most important fact. The method of staining which I have referred to has also established the truth of an observation made and described thirty years ago by Max Schultze, but ignored almost entirely ever since. You have all learned to regard the axis-cylinder of a nerve fibre as a single thing, a single conducting path. And that great worker whose researches and results have dominated knowledge since those days, Ranvier, did not recognise the truth of Max Schultze's observations, and hence they practically disappeared from current knowledge. But by the study of the axis-cylinder and its divisions by the method of staining to which I have referred, and by other methods which have been elaborated from that, it has been proved that the axis cylinder is a complex structure, each consisting of a number of fibrils. I have searched in vain for any statement of the number of fibrils, but I have been told privately by Obersteiner that in a rather

[1] I do not know that the name "matrix" has hitherto been applied to this ground-substance: some convenient name is needed, and none is yet current.

large-sized fibre of the sciatic nerve of a frog there are about fifty of these fibrils making up the axis-cylinder. Each of the fibrils is a separate and distinct conducting path. They seem to be composed of a peculiar material, which is separated by another substance, differing a little, but not enough to enable any distinction to be made out by ordinary methods of observation—for instance, by observing it with the highest power in the fresh state. But they differ (and it is a wonderful thing when you come to think of it) just enough to permit the chemical influence of the hardening agents, supplemented by the effect of staining agents, to act upon them in such a different way as to make them ultimately distinguishable. It is a fact of very profound significance that the slightest conceivable difference in nature, utterly invisible to us, responds to the influence of chemical substances so as to be vastly more observable. I say it is significant because it makes us think of the way in which different chemical substances have an action upon special parts of the nervous system, one substance upon one part and another substance upon another part, although the nerve material at the various places seems absolutely identical. You know the way in which strychnine will pick out certain motor structures on which to act and into which to enter, and you are aware of the way in which atropine will select, of all structures in the body, certain nerve structures in the eye; the way in which lead or arsenic will first enter into and be assimilated only by certain nerve-endings of all the nerve-endings of the body, and so produce special palsy. We see that fact in the effect of poisons during life, which can only be by the way in which the living material must possess some chemical difference, more effective through vitality, by which it is able to receive and react upon, to be changed, and ultimately destroyed, by one chemical substance or compound and not by another. This separating material has a more horny aspect and passes on into the matrix in which the cells lie and there constituting a spongy structure, is called "spongioplasm"; and the material which it separates, which forms these continuous lines of fibrils, as they appear to us, is called the "hyaloplasm," and is apparently the conducting element. There is a sufficient difference between these during life to prevent the passage from one fibril to another of whatever may be the marvellous and mysterious change which flashes along with lightning-like rapidity, and which we call a nerve impulse.

When the axis-cylinder was believed to be a single body we described and believed we recognised its nature; but if we ever perceived its utter mystery we never ventured to emphasise it. I mean the mystery that it divides. The division of a single conducting tract cannot subserve any really intelligible use, except to spread over a larger area its connexions—could serve no purpose such as, for instance, differentiation of sensation. And the number of separate axis-cylinders in the sensory nerves of the skin is not enough to explain the way in which the various forms of sensation are differentiated in the small areas in which they can be distinctly localised,—so much so that one writer, a few years ago, perceiving that fact, denied that there was that differentiation. Because there were not enough axis-cylinders he said there was not the differentiation; that we could not explain the differentiation, nor could we understand the good of the division of the axis-cylinder. But this division we now see to be simply separation of its conducting fibrils. In the light of this fact its service at once becomes clear and the localisation is intelligible. But Max Schultze observed also—and, curiously enough figured it so, although he did not thus describe it in the text—the passage of these fibrils through the nerve cells without any interruption. That has also been securely demonstrated and proved by the new method. So that we have this astounding transformation in that which we perceive; we have in every axis-cylinder a bundle of separate conducting fibrils, and we have those fibrils passing uninterruptedly through the nerve cells to the branching processes and ending at the terminations of their branches. Instead of that old conception of the prolongation of a nerve cell passing to the process of another nerve cell and blending with it, we have the nerve cell receiving a number of fibrils which simply lie together in the process. They may be seen merely skirting the cell body, going from one process to another sometimes, or from several processes to the large axis-cylinder process. From that fact there follows a most momentous fact which is of signal importance to us, and yet which seems imperfectly recognised by those who are working at the subject. Those fibrils passing continuously through the cell body can only conduct through the cell body. Our old conception, so simple, so attractive, that the nerve impulses originate in the cells—fascinating from the analogy of the cell body to a tiny battery originating a current—all that entirely disappears. Moreover, if we find this continuity of the fibrils distinct in some cases we feel at once that it is one of those fundamental structural arrangements which must be universal, and we must once for all give up the idea that the nerve cells are sources of nerve impulse.

What, then, is the function of the nerve cells? We know that on the nerve cell depends the life of the processes; we know how the latter degenerate when separated from the cell and when the cell is destroyed. The cell body is the vital centre for the whole, apparently through the nucleus. A great deal of complex arrangement has been made out in it, but we may disregard this for our present object. The cell protoplasm lessens and then apparently disappears as we pass along the processes, and especially in the long axis-cylinder process. But we find at places some protoplasm, with a small nucleus, and, although it has not been proved, structural arrangements have been discerned which permit the conception that there is a continuity of protoplasm along the fibre, too delicate to be seen, by which the life influence of the cell body is conveyed. So that we have to look at each cell as a vital structure, with its processes and fibres consisting chiefly of the fibrils, but with the life of the whole the fibrils are not directly concerned. They are conducting bodies, elements, which pass through the cell, and the impulses which they conduct from the cell must come to the cell by the branching processes, and they must originate at the extremity of those processes.

How, then, do these impulses arise at the extremities of the dendrons? They arise in consequence of some influence which passes through the matrix from other processes which conduct from a cell; but what happens there is a profound mystery. We have no means of conjecturing whether these impulses pass in some way unaltered through the matrix to the extremities of the other dendrons, or whether some influence which is not the same as the conducted impulse is generated in the matrix. But we conceive that this may be a process of excitation of the fresh impulse—a process which is like a stimulation. We can see that the impulse which arises in the extremities of the dendrons may be excited by something which is not the same, just as an impulse is excited at the periphery by the motion of a touch.

We know really nothing whatever of the actual minute structure of the matrix through which some influence must pass. There appear to be in it the two elements, hyaloplasm and spongioplasm, and yet they cannot be identical in nature with that in the dendrons; the staining by silver of the dendrons disposes of such a view; for the matrix remains entirely unstained. There are other mysteries, but we cannot wonder at that, because if such a vast amount of new fact is presented to us, there must be a corresponding difficulty in discerning details, and the more we can see the more there must always be that we cannot see distinctly.

I think those are the leading facts regarding the new discovery. Let me, however, point out one consideration. At first it seems almost incredible that we should have all these impulses originating in the matrix centres at the extremity of the dendron. It seems intelligible that from the bodies of nerve cells we should have those impulses generated, but it is difficult to understand that all these minute extremities of the dendrons should be capable of generating the nerve impulses which pass with such uniformity and effect along the nerve fibres, each fibre so minute, and yet with fifty fibrils in a single axis cylinder. It is one of the new facts which startle us and the lesson of which at first we find it difficult to absorb. But remember how multiplicity neutralises minuteness. We are apt to forget how the mass of sandstone is composed of those tiny grains which on the beach seem to be so destitute of any element of stability, or momentum, or resistance such as we have in the mass. And everywhere we trace the same fact, from the waves of light downwards. That which is considerable is composed of that which is infinitely small; and I think that with the remembrance of it all difficulty in grasping and holding the new knowledge should vanish. Remember, also, that in the nerve during life all processes of vitality go on with absolutely the same precision, whatever their minuteness or their nature, and also

that all the atomic changes from molecule to molecule, by which materials alter and by which energy is made free or locked up, all the changes we call chemical, depend for their precision in the mass for their precision in the molecule.

Let me glance at a few other points; you will be able to discern many in greater detail for yourselves. Consider how this discontinuity explains the arrest of secondary degeneration in the grey matter. You know, for instance, how the ascending degeneration in the spinal cord goes up to the grey matter of the medulla, and the degeneration which goes down the cord stops short of the motor nerve cell, through which, nevertheless, the impulse passes. That has always been a mystery. We had an impulse going down the fibre; we knew it passed through the motor nerve cell; we knew there must be continuity of path, yet why was that degeneration not traceable to the second nerve cell? We could only conjecture that there was a fresh vitality in the nerve cell, which acted along the process a certain distance, and that then the vitality of the fibre was met by the vitality of the descending fibre; part had degenerated, but the part near the nerve cell was preserved. Now we see that they are not continuous; there is no structural unity between them, and we can understand why the degeneration does not pass on into the dendron of the next cell. There is no doubt that the degeneration which results from the destruction of the cell involves the short dendron as well as the long fibre, although the difficulties have hitherto prevented its early observation.

I spoke just now of chemical changes as an instance of the fact that, as of matter so of energy, that which is discernible in amount depends for all its features on that which is minute beyond discernment. Those of you who attend here have heard me say that the chief progress in pathology in the latter part of this century has consisted in the discovery of the immense extent, importance, and profound influence of chemical substances introduced by the morbid processes. The new nerve pathology of this period is chiefly a chemical pathology. It was largely due to the discovery of multiple neuritis, which was found to be almost always the result of a chemical substance. That has been followed by the discovery that when organisms of disease produce effects on the nervous system which are manifested by symmetrical derangement of special functions many of the effects—it may turn out all of them—are the result, not of the organisms, but of chemical substances produced by their growth. And we are discerning now how many poisonous substances are produced—must be produced—in the body by slight modifications of metabolic disorder. That must be the secret of the way in which, for instance, in gout there is now and then sudden evidence of the existence in the body of some acutely toxic agent which may give rise to the perfectly symmetrical effects such as multiple neuritis. Only ten days ago I saw a severe and fatal case of characteristic intense multiple neuritis, which was a result of rheumatic influences in a gouty and rheumatic individual. Instead of the effect of cold being such as to generate a mild poison, by some modification there had been produced that which was capable of acting in a most virulent way upon the nerves. Again, we have the discovery of the way in which the nerves are acted upon by arsenic and other mineral poisons, and we have learned the way in which many other symmetrical results are produced by such mechanisms; how acute specific diseases are followed by such processes in a way that leads us to conclude that the organisms of those diseases must have generated a poison. We are compelled in the same way to believe that locomotor ataxy is the result of some toxic material produced in the body by the syphilitic organisms. It is characteristic that these poisons have a certain proclivity to certain parts; and in locomotor ataxy we find that the degeneration occurs in two parts—in the fibres which conduct towards the cord and in the posterior median columns. We have the strongest reason to believe that the fibres in the posterior median columns are the continuation upwards of the afferent paths from the muscles. Both of those belong to the nerve cells of the posterior ganglia; they are dependent on those cells for their life, so that those fibres, with the cell, constitute a neuron. Thus we see that tabes is a degeneration of a single neuron, and we know that just the same degeneration is produced by some actual poisons. Hence, that which we call a disease, which we recognise by changes rather widespread in the system, is simply the illustration of the affinity of a poison for one definite nutritional unit. Another most interesting point which we conceive and understand so much better in the light of the new facts is the strange circumstance that in paralysis agitans we never get structural degeneration of the motor path, although we are compelled by all facts to regard it as a senile degeneration of the motor cortex of the brain. I have not time to describe the evidence of that, but senile degenerations when intense tend to go on to decay and death of the parts, and it was a mystery why we do not get such degeneration in paralysis agitans, and why therefore we never get in that disease, in spite of the peculiar spasm, a foot clonus. One would think it was the symptom which, of all others, would be there. It is absent because we do not get degeneration of the pyramidal fibres in the disease. But we see that the spasm and rigidity must be the result of charges at the place at which the impulses arise—namely, in the extremities of the dendrons. When we thought of the motor impulses coming from the nerve cells we thought the degenerating processes must be in the nerve cells, but, you see, all we are justified in doing is to refer the morbid processes to the extremities of the dendrons, and the nutrition and vitality of the dendron depends on the cell body. It ceases to be surprising; and it also ceases to be surprising that all search for morbid changes in the nerve cells has been in vain.

But there is one great test of the truth of our ideas, and by "truth" I mean the correspondence of our thoughts with the facts they represent to our minds. That test is the revelation of correspondence where there seemed to be diversity. Those things that seemed dissimilar and yet ought not to be according to our general knowledge are seen to be alike from our new point of view. What is even more important—so important that I shall have to ask you to note how our subject illustrates it—is that things that are far apart are seen to correspond. I will make this clearer in a moment. I think it would not be easy to find in physiological and pathological science anything more striking than the fact that this origin of the nerve impulses at the extremities of the dendrons brings into harmony the functions of the elements of the nervous system, central and peripheral. We now see in the centre the same isolated, separate, minute multiplicity of origin and subsequent blending that we find and are familiar with in the periphery, in the way in which the sensory nerve impulses originate at the terminations of that which we thought to be the divisions of an axis cylinder and now see to be the extremities of its component parts. Compare this with the quite diverse aspect of such an origin of the nerve impulses at the periphery and in the bodies of nerve cells in the centre. I repeat this because discoveries that involve normal correspondence not only are testimony to truth, but prepare us for perceiving corresponding morbid changes the discernment of which may be to us a revelation. Take this example, not unrelated to our present subject. We have taken a step upwards and onwards when we perceive that primary lateral sclerosis is a degeneration of the fibres of the pyramidal tracts, which begins at their terminations in the grey matter, in the ramifications which terminate the axes of the fibres, and conceive of this as a degenerative process, similar in all essential relations of seat and nature to the degeneration in the peripheral fibres with which we have become familiar as degenerative peripheral neuritis. In each case we have the failure of nutrition in the extremities of the fibres, of the long processes the ends of which are far distant from the vital centres. It is known that the degeneration of the pyramidal fibres in its early stage is greatest below and may even cease a short distance up the cord, precisely as does that of the fibres of the limbs. We see this analogy, and more than analogy, with far more clearness if we perceive also the termination of the branching ends of these fibres in the matrix of the grey substance of the cord, just as those of the peripheral nerves terminate, for instance, in the skin. Here we have another definite extension of that which we must call knowledge in consequence of the discoveries we have been considering.

The difficulty of readjusting our thoughts seems even greater if we look at such diseases as epilepsy in the new light. We have to conceive the sudden energetic discharge with all its simultaneity, with no appreciable interval between that which occurs on the two sides of the brain, to be from this infinite multiplicity of motor dendrons. It is enough to make us recoil from the new conceptions and look back at the old, and at the path we have traversed, to see

whether, after all, we can have been right in the steps we have taken. But we now perceive in the old conceptions the same difficulties that we have in the new, though we never before realised their existence. We find it no easier to conceive these impulses arising from the nerve molecules of the cells than from those of the dendrons. We have simply the same elements, the minute masses of nerve substance, which are compactly arranged in the cell body, separated at the ends of its processes. It is as hard to think of the action of such groups, simultaneous or successive, combined or disjoined, if they are massed in a nerve cell as if they are at the ends of the short processes, separated by distance that is unimportant and, moreover, accessible far more readily to the nutritional material the molecules of which bear in their mysterious constitution the hidden energy to renew that lost in function. There flashes upon us, as it were, the fact that we had been blinded by ideas which seemed to have in them a capacity of explanation wholly illusory. And it seems as if the perception we have got of the extension of the nerve structures is a symbol of the extension of our thought; we are able to see, at least dimly, through that which was before obstruction, and if we can discern but little more by seeing through, it is nevertheless a real advance to be able to discern light where before there was darkness, though it be only light.

All such facts as these, gentlemen, are not merely general and to some extent theoretical; they are essentially practical. For they enable you to form more clearly and more adequately that visual picture of the disease which is before you, the ability to construct which can be cultivated and increased so much by use and practice, and which enables a man to obtain a much more clear conception of what there is in the individual case before him, to forecast more accurately its future course, and to discern with more precision by what means that future course may possibly be modified. The picture we can form of all the fine diseases of structure and of the way in which function is deranged when molecular nutrition is altered or toxic agents act—arrest, augment, or alter—this is made different by the new view we have to take. To make it useful we must become familiar with its details; we have to become able to recognise old facts under a new aspect. In all that is novel difficulties loom large, and use and wont, with the time they need, alone can enable us to gain in power from the gain in knowledge, and to secure that increased service which lies before us, not altogether hidden, and yet quite inadequately perceived.

An Address
ON
THE ARMY MEDICAL SERVICE.

Delivered to the Students at the Opening of the College Schools on Nov. 1st, 1897,

BY SIR WILLIAM THOMSON, M.D. R.U.I., F.R.C.S. IREL,
PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

LADIES AND GENTLEMEN,—In inaugurating to-day the winter session of your studies I have to repeat on behalf of the council, the professors, and myself our most cordial welcome. If these words are trite I ask you to believe that they are very sincere—for to us who are your seniors it is always a pleasant duty to meet generation after generation of our younger fellow students who are setting out upon the path which we, too, have trod. Days like this may tell us that we are growing older, which is not a pleasant reflection; but they bring back to us the memory that we, too, had a beginning of study as you have; that we were filled with all the hopes and legitimate ambitions which I trust inspire you; and that we made our youthful resolves, as I beg of you to make them to-day, to strive with all our might to do our duty in the world.

The school which you have joined is one to which you may well be proud to belong. It has had a long and illustrious life. Out of these halls have passed crowds of men who have gone into all the corners of the earth doing credit to the fair name of their country, and upholding, as the phrase of the declaration of our Licentiates goes, "the honour and dignity" of our College. Among many others there occur to me at this moment three or four who have become exceptionally distinguished. One is our countryman, Sir William MacCormac, who at the present moment fills the Presidential Chair of the Royal College of Surgeons of England, and on whom Her Majesty has recently conferred a baronetcy, a man known the world over for his splendid attainments. In Australia Sir Thomas N. Fitz-Gerald, the leading surgeon of Melbourne, stands alone in that country as the first medical recipient of a Royal distinction. In India the principal medical officer of the army is Surgeon-General Gore, whom so many of us know and value so highly; and in Ireland to-day the Army Medical Department is presided over by our friend, Surgeon-Major-General Preston, who, like his comrade, bears honourable wounds received on the field of battle. The school to-day is, I am glad to say, full of the energy and vigour which are so necessary to success, and I am very sure that if you will only take advantage of your opportunities there are open to you all the rewards which are to be earned by absolute devotion to the work of your profession.

But let me say that this school has not a monopoly of excellence. The other medical schools of Dublin and of Ireland at large are all animated by the same desire to excel—to turn out the student fully prepared for the labour of his life. Whatever rivalry exists is not a parochial one. I trust we all cling to the school in which we were taught. We like to revert to our early associations with it, to watch the career of our companions of those days, and to rejoice when we see some new glory added to its name. I do not care much for the man who, without some very special cause, does not stand up for his school or college or university. I like him to think it the best. I like to know that his young and generous affections have fastened themselves upon the place where his early thoughts began to develop and were shaped for the career which he has chosen. Therefore I hope you will stick up for your school. But I should like you to remember that for the outside world there is even a higher ground upon which you may stand. You may belong to this college or that University, but you are students above all of the Irish Medical School, and in that fact you may well find a power to evoke your pride. It has a record which is one of the brightest of this land, and it has helped in no small degree in the past, as it does now, to create and to mould the modern teaching of medicine and surgery. I congratulate you on belonging to it, and on holding the belief that you can find at home teachers as zealous and as learned as are to be found in any other part of the whole kingdom.

Last year when I had the honour of addressing you from this chair I endeavoured to impress upon you the advantages which members of our profession must derive from a liberal education, and I tried to interest you in the cultivation of general literature as a relaxation from the severer work in which you will be engaged. To-day I intend to occupy a short time in dealing with one or two matters which more nearly affect the actual study in which you are embarked.

I think I may assume that all of you have already begun to think of what you will do when you have passed your final examination. Some of you will probably pass into the struggle of civil practice with its great possibilities and great uncertainties. Some of you look forward to the public services, which have the advantage at all events of security of income with a fair share of honours. You cannot, therefore, fail to be interested in the agitation, which seems to arise with almost rhythmical regularity, concerning the Army Medical Service. You are, of course, aware that at the examinations held in August last candidates to fill thirty-six places were advertised for, and that only twenty-two presented themselves, and that in February last there were thirty-five vacancies and only twenty-six candidates, of whom but thirteen qualified to enter the service. In the two preceding competitions practically the same state of things existed. The result is that at the present moment there are over eighty places vacant—places which cannot be filled. That is a very startling fact, because in some respects the Army Medical Service offers a splendid career to a young surgeon. It has its risks of course, but a man who enters it must accept them, and we know that they have not in former times prevented some of the best of our Licentiates from joining. In a monetary sense it far exceeds the combatant branches. In addition to better pay it is possible for a man to leave the service after twenty years with a pension of a pound a day, and so on, in proportion

to time. Compared with the ordinary results in civil life this is a very exceptional position, and therefore the dissatisfaction which has led up to this abstention of candidates must be of a serious character. Several commissions have sat to take evidence as to these grievances, and warrant after warrant has been issued yielding certain claims. But a number still remain unsatisfied. I do not propose to occupy your attention with these in detail, but I shall shortly refer to one or two that stand pre-eminent.

The primary grievance is a question of rank, and here we find the views of the combatants and the surgeons directly at variance. The medical officers declare that although they are styled Surgeon-Captains and Surgeon-Majors, and so on, these titles give them no real rank whatever in their relation to other officers and men of the army, and that they are constantly subjected to humiliations which make their position unbearable. The rank is a departmental rank; that is, they are Surgeon-Captains within their own department, and it is alleged that the other officers make this difference felt in such a way that the example set is followed by the rank and file. Indeed, at the Camperdown Commission of 1890 one very distinguished general officer said he addressed the head of the Army Medical Department as "W. MacKinnon, Esq., C.B., Director-General Army Medical Staff," although the title to which that gentleman was entitled was "Surgeon-General MacKinnon," and he was marked in the Army List as "ranking as Major-General." Now it may be supposed that the army surgeons have only to do with the sick in hospital, and the wounded on the field. But they have actual military duties to perform. They have under their direction a body known as the Medical Staff Corps, which is composed of bearers and male nurses, and, generally, of the men who aid in rescuing the wounded, and carrying all the equipment of hospitals on the field. These men are drilled by medical officers and marched into action by medical officers. The position of civilian Mr. John Smith, Surgeon, then, in command of a disciplined bearer company, would thus be rather an anomalous one.

The case on the opposite side is that medical men in the army have only rank in their own department, and that to give them real rank in the army, or to call them after the form of "Captain Smith, Surgeon," would be to place them in a ridiculous position. It has even been unwisely alleged that if this plan were adopted a case might occur in which a medical officer would take the command of the combatants in the event of the officers above him being disabled. As a matter of fact such a thing has happened, when all the Combatant officers were wounded; and you will be glad to hear that the surgeon, an Irishman, and a Fellow of this college, led his men to victory and was promoted for it. But no one has ever made such an absurd claim as that of combatant command. Moreover, in other corps officers who are given rank have what is called limited command, that is, only over the men in the special body to which they belong. Therefore, there is no force whatever in the objection to which I allude, and it appears to have been made without knowledge of the laws of the service. But we have examples in other countries of how the system works. If we take Switzerland we find a citizen army which is turned out every year for a month's training. It is put on war footing to carry out the manœuvres. I am assured that there are many things in that army which we might copy with advantage. But there we find the private practitioner summoned to his duty as a military surgeon. He at once becomes captain or colonel, as the case may be, and after his labours are over he reverts to his old position and assumes his civilian title once more. His distinguishing mark on the field is the Geneva Cross on his arm, and no one thinks of his being mistaken for a combatant.

But it may be further stated on behalf of the army surgeons that they are the only officers who are denied the simple title of their rank. The captain of Engineers is not called Engineer-Captain, but Captain, Royal Engineers; nor do we hear of Paymaster-Colonel or of Army Service Corps Major. The officers of the Army Service Corps are now Majors, Captains, Lieutenants, and the same titles are extended to the pay department and to some army schoolmasters. There are no prefixes to dilute the rank. As to the Pay Department the answer is made that the officers have already attained rank as combatants. That I admit. But I reply that they have resigned their positions as combatants and can never go back. They have passed into a branch which is purely civil; they certainly have not to discharge their duties under fire; but still they continue not only to hold these titles but to pass on step by step until they receive the title of Colonel. It is true also that some of these are honorary only, but they have a distinct social significance, and they serve to show that there is a liberality in the extension of these advantages to other departments which is refused in the case of the medical department. Let me say at once that I am trying to bring before you some points in the case made by the medical officers. I see certain difficulties in the way, but then I must remember that we are looking at the whole matter from a standpoint outside the army. We cannot understand the thousand and one matters which cause friction as do the men who spend their lives in the service. All we can say is that more than three-fourths of the medical officers claim army instead of departmental rank, that they are in the best position to judge of the importance of this concession, and that the solutions of the difficulty which they propose are based upon experience.

A second claim which is made is that the whole of the medical service should be converted into a Royal corps. The arrangement which at present exists is a curious one. The surgeons form a body which is called officially the Army Medical Staff. All the men who constitute the bearer companies and male nurses, and who are concerned in general hospital work, whether in the field or at stations, are called the Medical Staff Corps. In other words, the officers are in one group and the men are in another, and they do not even wear the same uniform. If this plan were carried out throughout the army we should have an extraordinary condition of things, for the combatant officers would be nominally separated from the soldiers whom they had to command in action. The necessity of having the whole medical apparatus—if I may so call it—of the army formed into one body is obvious. In these days the succour of the wounded is one of the most important obligations which attach to the general conducting a campaign. Organisation and a perfect technique are indispensable if the maimed are to be rescued quickly and successfully treated. The men who have to do this work should be under the sole direction of officers whose training fits them for that position. For really efficient work it is essential that these two bodies should be formed into what is known as a unit. In this way the men know their officers and the officers their men. In a united corps the surgeons would soon judge the quality of their subordinates, their proficiency, how far they could be relied upon in difficulty, and all the advantages which arise from the daily contact of commander and men. If such a body existed it would be possible to improve the internal defects which now exist in the medical department itself and to place it on a higher level of efficiency by a system of continued professional education. But at present the officers and the men are in two separate groups. They are moved about independently of each other; and when an emergency arises so many medical items are suddenly thrown together to settle down as best they may. It is very much as if in the case of a battery of artillery a number of officers, gunners, and drivers who had never met before were sent to take charge of guns that they had never fired, and horses they had never ridden, and were bundled into action at once. If this strange separation is good, why does it not prevail in the Royal Engineers or other departments? But it would be destructive of that pride which every soldier feels in the branch to which he belongs. The medical officer, then, naturally anxious that his department should be kept at the highest standard of efficiency, asks to have the present system of dual bodies abolished, and by the creation of a Royal Medical Corps to establish that cohesion and *esprit* which unity alone will give.

There are other matters of perhaps smaller importance which I will not discuss, but in their aggregate they have served to create a discontent among army medical officers which has culminated in the present condition. I know that the combatant branches of the army declare that they wish to have good surgeons, and that they would be glad to remove any causes of complaint. But they are unanimous on the question of rank, and they will not yield upon that point. I have said already that we are only outsiders, but I think we are able to say from what we see that that demand is crucial. Whatever is done the rank which is given to the medical officers must not be a mere departmental name, but a real rank which will secure them from the petty indignities to which their position subjects them. The present rank means nothing, and the medical officers have learned to understand that they are only civilians in the eye of the army. Nothing, I think,

could have been more unfortunate than the application of this term. It has been made free use of and it has served to establish many in their hostility to the medical officers. But are they civilians? They hold commissions in Her Majesty's army, they wear a uniform and carry arms, and in an army they are placed in charge of the thousands of armed men and the transport which go to make up a hospital train. In action they are with the fighting line. Of necessity they are where the fire is heaviest, for their duty is to relieve the wounded on the spot where they fall, and for this reason you will realise why it is that the death-rate of army medical men is nearly twice as great as that of the combatant officers. I looked into the Army List the other day and I found that nearly twenty surgeons who are actually serving or are alive and retired have won the Victoria Cross. And I noted also that they are called "military recipients" of this splendid reward "for valour in battle." If they are "military" they are not "civilian." I press my argument further by pointing out that no civilian can win the decoration. The Victoria Cross warrant expressly declares that the Cross is for the naval and military services only, and that no "other circumstances or condition whatsoever, save the merit of conspicuous bravery, shall be held to establish a sufficient claim to the honour." What, then, becomes of the allegation that army medical officers are only civilians? They are not only in the army, but they are of the army. Every circumstance of their official lives proves it, and there will be no contentment until that fact is established by warrant beyond all cavil.

I have brought these matters before you so that you may understand some of the reasons of the outcry which is raised against the Army Medical Service. Even with these drawbacks many will find it to their interest to go forward for appointments. I by no means blame them. The competition of life is very keen, and I do not advise anyone to hold back. Perhaps I shall be condemned for this statement, but who, I ask, will provide an equally secure position for the young men who follow counsels of another kind? I know of none; and it seems to be asking too much of our students to stand back and thereby perhaps sacrifice a life's career. Each knows his own necessities and desires. We will do all in our power, as we have done, to help forward army medical reforms, but we must not speak hardly of those who in spite of disadvantages seek entrance into the service. At the same time the authorities must know that many brilliant men are looking elsewhere for a career, and that it depends upon an enlightened policy whether the medical department of the army will be again largely recruited from among the most promising of our young surgeons.

I pass from this question of the day to congratulate the prize-winners. Mr. D. A. Fitzgerald and Mr. F. J. Palmer have been awarded the Carmichael and the Mayne Scholarship respectively, and having regard to the extent and severity of the course their success is a brilliant one. In the classes Mr. J. S. P. Stewart has won three firsts and a second, and Mr. E. Glenny two firsts and a second, a result which points to still higher distinction in the future. Then Miss Dreaper and Mrs. Hennessy have each carried off a first and a second prize, and thus illustrated the fervour with which our lady students devote themselves to their work. The rest of the list shows that a large proportion of the class has engaged diligently in the studies of the various years, and it is a special gratification to find that in every instance a candidate has qualified for a first rank. Of the number who just failed in the struggle I have no record, but I wish to encourage them and all others to try again. They must not take defeat to heart too keenly and throw down their hands in despair. I have known some distinguished men who never could win a school prize, although later they earned the highest successes in life; and I trust that some of you who miss your names from the returns will yet achieve that which you have lost to-day. There is much that I should like to say to you now, for next year another President will speak to you from this place; but time is running out and I have already trespassed upon your indulgence. But I should like you always to bear in mind in your work that examinations are not the only things for which you should read. To have in your mind constantly that you must only make up what will get you through the portal is demoralising; it begets the worst of all mental processes—cramming. Prepare for your examination by all means, but let your reading be wide and generous. And, next, I sometimes feel that students do not value as they ought the work in the hospital wards. Give to this all the time you can spare, not with your hands in your pockets, as I occasionally see, but with your mind keenly set upon the cases which are before you. For, necessary as all teaching in the schools is, and important as it is that you should be highly informed in the subjects taught here, it is with the living sick you will have to deal when you come to practise. No amount of knowledge will avail you unless you can apply it—unless you are able to recognise disease or injury and use your remedies. In a very few years these classes which I now address will have passed away into the world. You will be scattered here and there; some in large cities, but many in places where you will be isolated from the helping mind and hand of a member of your profession. Then you will realise in its fullest extent what responsibility is—what it means to have in your charge a case which you find difficult to read and which you must deal with alone. Nothing will be more distressing to you than this failure to help if after all the fault is your own. I ask you, therefore, to try to realise that responsibility now before the day of humiliation comes, and by your industry to relieve yourself of the possibility of self-censure.

With these words I draw to a close, only waiting to assure you that your teachers will do their part, that we all wish you the highest success, and that we shall look to you with confidence to uphold the reputation of the medical school of this old city of Dublin.

SOME NOTES ON OVARIAN TUMOURS, WITH A FIRST SERIES OF FIFTY OVARIOTOMIES.[1]

BY WILLIAM JOHN GOW, M.D., M.R.C.P. LOND.,
PHYSICIAN-ACCOUCHEUR TO OUT-PATIENTS, ST. MARY'S HOSPITAL; OBSTETRIC PHYSICIAN TO THE ROYAL HOSPITAL FOR WOMEN AND CHILDREN AND TO THE METROPOLITAN HOSPITAL.

THE remarks contained in this paper are mainly founded on a series of fifty cases in which I have performed the operation of ovariotomy. The term "ovariotomy" is used to indicate the operation for the removal through an abdominal incision of cystic and solid tumours of the ovary, and also the operation for the removal of parovarian and other broad ligament cysts. No case is included where the ovaries were removed for the purpose of checking the active growth of fibroid tumours or where the appendages were removed on account of salpingo-oöphoritis.

It is well known, though none the less remarkable, that in many cases no symptoms other than those of enlargement of the abdomen are complained of by women who are the subjects of ovarian or broad ligament tumours, and that it is on account of this enlargement alone that they generally present themselves for treatment. Symptoms are, however, by no means always absent. Among my own series of cases disturbances of menstruation were the commonest of all symptoms and were noted in eleven instances. In three of the cases there was amenorrhœa for a longer or a shorter period, and in eight cases there was menorrhagia or metrorrhagia which appeared in point of time, as far as could be judged, to correspond to the growth of the tumour. It did not seem possible to attribute the alteration in the menstrual function to mere coincidence, but I had previously believed that an ovarian tumour, if it affected the menstrual flow at all, more often led to its cessation than to its increase. The history of the cases here recorded, however, does not support this view.

So far as it is possible to judge there does not appear to be any connexion between the variety of tumour and the nature of the change in the menstrual function. It has been asserted that with fibromatous tumours of the ovary menorrhagia is common, and in the single case of fibroma of the ovary which I have operated on menorrhagia was certainly present. The co-existence of amenorrhœa with the development of an ovarian tumour often leads the patient to believe that she is pregnant and may even mislead the medical attendant unless a careful routine examination is made. One of my patients, who was a single

[1] A paper read before the Harveian Society on Jan. 7th, 1897.

woman, not only believed that she was pregnant, but had even succeeded in identifying the supposed father, and was up to the time of operation in receipt of a weekly allowance which had been granted to her as the result of legal proceedings. It is probably the only case recorded in which an ovarian cyst has proved to be a source of income. It is much more common for a gravid uterus to be mistaken for an ovarian tumour than for an ovarian tumour to be mistaken for a gravid uterus, and although in many cases it is hardly possible to make such an error, yet in some cases the differential diagnosis is not made without a good deal of trouble. If a well-marked fluid thrill is present the idea of pregnancy may practically be put out of court at once, but it is not uncommon for an ovarian tumour to resemble very closely the consistence of a gravid uterus at the fifth or sixth month, and secondary cysts projecting on the surface may easily be mistaken for fœtal parts. Fœtal parts, however, move away from beneath the fingers of the examining hand, whereas the projecting knobs of the ovarian cyst remain permanently in the same place. Of course, in many cases a careful bimanual examination will reveal the unenlarged uterus lying apart from the tumour, but some broad ligament tumours and tumours which have formed adhesions to the uterus move with the cervix. A careful consideration of the history of the case and a thorough physical examination will rarely leave any real doubt as to the diagnosis. In cases of doubt it is always better to wait for one or two months rather than run the risk of opening a patient's abdomen and finding nothing but a gravid uterus. Menorrhagia and metrorrhagia seem to be about equally common, but it is very rare to see the loss sufficiently profuse to induce any marked degree of anæmia. The removal of the tumour has always led to the disappearance of this trouble, and this supports the view that the occurrence of menorrhagia or metrorrhagia is not a mere matter of coincidence.

Pain is another symptom which is fairly common, and sometimes is very difficult to account for. Twisting of the pedicle or suppuration and inflammation of the cyst, of course, are well-known causes, as is also rapid distension of the cyst from hæmorrhage into it, but in several of the cases recorded very severe pain was complained of and yet at the time of the operation nothing could be discovered to account for it. In one case, a girl, aged twenty-five years (Case 31), who had a parovarian cyst on the right side reaching to two inches above the navel, severe paroxysmal attacks of pain were complained of which were sometimes so acute as to induce fainting, and yet at the time of the operation there were found to be no adhesions nor any evidence that the pedicle had ever undergone torsion. This shows that the occurrence of intense abdominal pain in a woman with an ovarian cyst does not necessarily mean that the pedicle has become twisted, or even that there are necessarily any adhesions between it and adjacent parts. In several other cases symptoms of a very similar nature were observed, for which no very definite cause could be discovered at the time of the operation. It seems probable that these attacks are of a colicky nature, and are due to irregular intestinal contractions caused by the presence of the tumour. Attacks of paroxysmal pain of a similar nature were a prominent symptom in a patient of mine who suffered from fibroid tumours complicating advanced pregnancy, and in her case sickness and some degree of constipation usually accompanied the onset of the pain, thus suggesting its intestinal origin.

Another condition which can hardly be spoken of as a symptom, but which sometimes is associated with the presence of ovarian tumours, is procidentia uteri. Complete procidentia in young virgins is undoubtedly a rare condition, but in six cases of this nature which I have myself seen in three of them ovarian tumours were present. This would certainly seem to indicate that there is some causal relation between ovarian tumours and procidentia, and shows how important it is in all such cases to make a thorough abdominal examination in order to determine if any ovarian new growth exists. In the cases which have come under my own notice the tumours lay above the pelvic brim, so that they could at that time, at any rate, exert no direct pressure on the pelvic floor, although of course when smaller they might have done so. This fact seems to suggest that if the procidentia is more than a coincidence it must be due to altered pressure relations within the abdomen, which would no doubt be more easily produced in young women with firm, resistant abdominal walls than in older women whose abdominal walls had already been stretched by child-bearing or weakened by the use of corsets. My youngest patient in whom procidentia was associated with the development of an ovarian cyst was fifteen years old. When first seen both anterior and posterior vaginal walls were completely everted, the cervix forming the central portion of the mass which lay outside the body. After ovariotomy she still had to wear a small ring to keep the anterior vaginal wall from bulging downwards, but before the operation no instrument could be retained. The tumour in this case lay in the abdominal cavity above the pelvic brim and did not extend into it.

Suppuration of an ovarian cyst is always the result of infection with pyogenic organisms. The infective agent may reach the interior of the cyst by one of three routes: (1) the lymphatics; (2) the Fallopian tubes; and (3) the intestine or vermiform appendix. Among my series of ovariotomies I met with four cases of suppurating cyst. Some authorities hold that by far the commonest route for the pyogenic microbe to take is the Fallopian tube. But in two of my cases the infection had certainly not reached the interior of the cyst by this way because in one of them the corresponding tube was perfectly healthy and in the other it was converted into a hydrosalpinx, which was not adherent by any part of its surface to the ovarian cyst, but was connected with it by a distinct and healthy mesosalpinx. In both of these cases the intestine was closely adherent to the surface of the cyst, and it seems therefore probable that the micro-organisms had passed from the interior of the bowel to the interior of the cyst, although in one case the suppuration dated from childbirth—or, at any rate, since that time the patient had suffered much pain in her tumour and had emaciated very markedly. No bacteriological examination of the pus was made, and therefore no absolute proof can be offered that the intestines were the source from which the infection was derived. In another case (Case 44) the suppuration was induced by a vaginal operation which had been performed six months before, apparently for the purpose of removing a uterine polypus, the operation being followed, according to the patient's account, by high fever and delirium, which lasted many weeks. In this case the pyogenic microbes probably reached the cyst through the lymphatic vessels or Fallopian tube. It is perhaps worth noting, but probably is a mere coincidence, that all the cysts which had suppurated lay on the right side. In three out of the four cases there was no rise of temperature, but in three of them there was marked emaciation. The pus contained in suppurating ovarian cysts is generally found to be sterile—that is to say, it contains no living micro-organisms, although they may be met with in the walls of the cyst; and this fact is one of considerable importance because it explains, what is well known practically, how if some of the pus escapes and soils the peritoneum there is very little real danger of septic peritonitis developing.

In four cases the cyst had ruptured. In two of them the rupture was the result of direct violence, and in the other two it occurred spontaneously. In the first case the patient, who lived in the country and was known to have had an ovarian tumour for eight years, fell out of a cart and alighted upon her abdomen, which was the most prominent part of her body. When seen by her medical man a few hours later she was found to be suffering from symptoms of collapse and complained of considerable abdominal pain, and the tumour, which was previously a very large one, had become much smaller and less well-defined. She remained in bed for six weeks. The tumour, however, soon began once more to increase in size, and four months later she was sent up to the Royal Hospital for Children and Women, and I removed a large very adherent papillomatous cyst of the right ovary. The omentum had to be extensively resected before the tumour could be drawn out.

In the second case (Case 33) the tumour, a dermoid, was ruptured during delivery. The posterior vaginal vault was also torn through, opening up Douglas's pouch, so that most of the greasy contents escaped externally. The collapsed cyst was removed by abdominal section on the fourth day of the puerperium. Spontaneous rupture of an ovarian cyst was observed twice in the same patient (Cases 39 and 50). On the first occasion a large multilocular cyst of the left ovary was removed, and on opening the abdomen the peritoneal cavity was found to contain a quantity of extremely thick gelatinous material which had escaped from one of the locules. The cyst wall was remarkably friable and tore with great ease. The peritoneum covering the intestines was

found to be deeply reddened and roughened so that it looked like velvet pile. Eight months later a second operation had to be performed owing to the development of a similar tumour in the right ovary, although this organ when examined at the time of the first operation was observed to be in no way enlarged. In this instance also the cyst had ruptured spontaneously and a large quantity of ovarian fluid was present in the peritoneal cavity. On neither occasion were there any special symptoms indicative of the extravasation of the cyst contents. I have already alluded to the question of the differential diagnosis of ovarian tumours from intra-uterine pregnancy, but the diagnosis of ovarian tumours from uterine fibroids, though sometimes easy, is, on the other hand, sometimes impossible, and this illustrates the importance of never undertaking to perform an ovariotomy without being prepared to perform abdominal hysterectomy if the tumour turns out to be uterine instead of ovarian. Until lately I had always thought that the presence of a souffle was distinctive of a uterine tumour of some sort, but in one of my cases (Case 42) on which I operated last summer a very highly-marked souffle, identical in character with that which is heard over a gravid uterus, was audible all over the abdominal tumour, and yet when the abdomen was opened it turned out to be an ovarian cyst occupying the left broad ligament. The tumour was not unusually vascular and no great vessels were seen running across its surface, and the only way in which I could account for the presence of the blowing murmur was by supposing that the sound originated in the aorta or iliac vessels owing to their being pressed upon by the tumour and was thus transmitted to the surface of the abdomen. The error in diagnosis—for I believed it to be a fibroid—was rendered more easy to make by the fact that the tumour filled the whole broad ligament and ran close up to the uterus, so that tumour and cervix moved together as one mass. Soft myomata which project from the surface of the uterus to one or other side of the pelvis, whether sessile or pedunculated, may be mistaken for ovarian cysts, and no amount of examination will sometimes prevent an error in diagnosis.

Another condition which may easily be mistaken for an ovarian tumour is extra-uterine gestation. Only a few days ago I operated on a woman who had what I thought was an adherent ovarian cyst lying in the pelvis behind the uterus but found on opening the abdomen that I had to deal with a tubal pregnancy of three months' development. In this case there was nothing in the previous history to suggest the true nature of the tumour which was felt. On another occasion a middle-aged woman presented herself with a hard irregular tumour in the left iliac fossa which was diagnosed as an ovarian dermoid. At the time of the operation it turned out to be an old six months' extra-uterine gestation which was encapsuled, and had evidently long since ceased to develop. The condition of the fœtus and sac, and the history subsequently obtained from the patient seemed to show that the gestation must have originated some two or three years before. In most instances, however, a careful consideration of the history and physical signs enable a differential diagnosis to be made; but in some exceptional cases like those above alluded to a correct diagnosis is hardly possible. One case at least (Case 39) merits a more detailed consideration because of certain points of unusual interest connected with it. The patient, who was sixty-three years of age, first came under observation in March, 1896, on account of a lump in the abdomen which had been noticed for five or six months. She had suffered, and was still suffering, from well-marked diabetes accompanied by emaciation. This disease seemed to have started about five years before, and at one time the symptoms were extremely serious, but under the influence of a rigid diabetic diet they became considerably less urgent, although she still continued to pass sugar in the urine. The abdominal tumour was very hard and nearly fixed and reached up to the navel; it was not tender and there was no ascites. It was feared that the tumour was malignant, but an exploratory operation was advised, although the existence of the glycosuria obviously increased the risk of such a procedure. At this time the amount of sugar passed was about eight grains to the ounce. The patient, however, did not come up to town for another two months, and during this interval the tumour grew rapidly, and now reached up to the ribs. The abdomen had become much more prominent, and the patient complained of considerable discomfort, and was only able to get about with great difficulty. There was at this time distinct evidence of free fluid in the peritoneal cavity. The urine contained sugar as before. Sir John Williams saw the patient in consultation with me, and it was decided to perform an exploratory operation. A week later I therefore operated upon her, and on opening the abdomen found that the peritoneal cavity contained a large quantity of thick colloid fluid which had been poured out into it as the result of the rupture of one of the compartments of a multilocular cyst of the left ovary. The tumour itself was non-adherent, and consisted of a large number of small cystic cavities containing a jelly-like material. This was scooped out and the tumour removed. The peritoneal cavity was cleansed as thoroughly as possible by means of irrigation with hot water. The right ovary was examined, but as it was quite small it was not removed. The patient made a good recovery. During the first week after the operation the urine passed was of very low specific gravity, and no sugar could be detected, but during the second week the sugar reappeared.

The hardness of the tumour was due partly to the extreme thickness of the fluid and partly to the large number of cavities in which it was contained. About four months after the operation the patient noticed another tumour in the right iliac fossa. It continued to grow, and when seen in February of this year there was a firm mass the size of a man's head occupying the right half of the abdomen, lying well above the pelvic brim. On opening the abdomen for a second time (Case 50) a tumour was found originating in the right ovary of a precisely similar nature to that of the left ovary, which had been removed eight and a half months before. The peritoneal cavity on this occasion also contained a quantity of colloid material which had escaped from the tumour, and it was necessary to again resort to irrigation to get rid of it. The patient once more made a perfectly uneventful recovery. I know of no other recorded case where ovariotomy has been twice successfully performed on a patient who was the subject of diabetes. On the second occasion the urine was tested and showed the same amount of sugar as before.

Dr. Halliday Croom, in the "British Gynæcological Journal," February, 1896, relates the case of a woman on whom he performed ovariotomy who at the time of the operation was the subject of glycosuria. According to him very few cases of ovariotomy in patients with diabetes or glycosuria have been reported, and but little is known as to the risks of operating under such circumstances. In Dr. Croom's case there was no thirst, polyuria, or emaciation, and the glycosuria seemed to have developed since the appearance of the tumour, and certainly disappeared a few weeks after its removal, and Dr. Croom believed that the tumour caused the diabetes, possibly from irritation or pressure upon the pancreas. The case which I have related above is interesting, not only on account of the fact that the patient was suffering from diabetes at the time of the operation, but also as an illustration of the difficulty of being sure whether an ovarian tumour is malignant or not. Hardness, lack of mobility, rapid growth, and the presence of ascitic fluid may all prove misleading, so that in every case in which there is the least room for doubt an exploratory operation should always be undertaken. An incision sufficient to admit two fingers is often all that is necessary, and if on examination there is clear evidence of malignancy it is of great importance to avoid handling the tumour unless it is free from adhesions, when, of course, it should be removed in the ordinary way. If, as is often the case, the growth is found to have infiltrated and formed adhesions to the neighbouring parts it is very undesirable to penetrate it with the finger—a thing which is very easy to do when the growth is soft, because it certainly seems to greatly increase the rapidity with which the disease subsequently spreads.

Ovariotomy has nowadays become such a common operation, and so much has been written about it, that it is not necessary for me to speak of it in any detail. The results of the operation have year by year shown a lessening mortality until at the present day it is quite exceptional for it to be followed by a fatal issue. Among my own series of fifty cases, which represents all the ovariotomies performed by me up to the present time, there has been no death, and in the great majority of the cases the convalescence was free from any exciting incident. The success which attends the operation is undoubtedly dependent on a rigid attention to all the details of antiseptic surgery. It is difficult enough to always attain to the ideal, and there will probably still occur from time to time an occasional death from septic infection,

TABLE SHOWING PARTICULARS OF FIFTY CASES OF OVARIOTOMY.

No.	Age.	Date of operation.	Place of operation.	Nature of tumour.	Result.	Remarks.
1	58, widow.	1892 Sept. 15th	Royal Hospital for Women and Children	Mainly solid; some cystic spaces, probably sarcomatous; right.	Recovered	Patient died two years later with recurrent growth in abdomen.
2	26, married.	Nov. 5th	Ditto	Papillomatous; right.	Ditto	Suffered from mitral stenosis.
3	42, married.	1893 Jan. 14th	Ditto	Papillomatous; left.	Ditto	—
4	25, married.	Jan. 20th	Ditto	Suppurating; right.	Ditto	Drainage; sinus formed; subsequent removal of silk ligature followed by closure of sinus.
5	26, married.	Jan. 27th	Ditto	Broad ligament cyst; left.	Ditto	Cyst dipped deeply into the pelvis; enucleation was difficult; cavity drained. A few days later fæcal matter came through tube; subsequently healed soundly.
6	50, married.	May 18th	Ditto	Papillomtaous; right.	Ditto	Very adherent to bowel and omentum.
7	33, married.	June 20th	Ditto	Multilocular; left.	Ditto	—
8	48, married.	June 27th	Ditto	Solid; soft and friable; probably malignant; left.	Ditto	No adhesions.
9	38, married.	Dec. 22nd	Ditto	Broad ligament cyst; right.	Ditto	Enucleation; drainage of cavity.
10	29, single.	1894 Feb. 6th	Ditto	Sarcoma; right.	Ditto	Large tumour; adherent to under surface of liver; small portion left behind. Left hospital three weeks after operation; subsequent death from recurrence.
11	36, single.	Feb. 20th	Ditto	Fibroma; right.	Ditto	Extensive attachment to back of broad ligament.
12	51, married.	March 13th	Ditto	Broad ligament cyst; right and left.	Ditto	Patient had a large uterine fibroid, which was left untouched. Cysts enucleated; cavity on right side drained.
13	32, married.	July 3rd	Ditto	Papillomatous cyst; left.	Ditto	—
14	24, single.	Aug. 21st	St. Mary's Hospital	Multilocular; right.	Ditto	—
15	45, married.	Sept. 18th	Ditto	Multilocular; right.	Ditto	Twisted pedicle. Tumour contained blood.
16	38, married.	Oct. 9th	Royal Hospital for Women and Children	Multilocular; right.	Ditto	During convalescence had an attack of right lobar pneumonia lasting six days, ending by crisis.
17	29, married.	Oct. 23rd	Ditto	Parovarian; right.	Ditto	—
18	43, married.	Nov. 1st	Ditto	Multilocular.	Ditto	—
19	15½, single.	Dec. 5th	Ditto	Multilocular; right.	Ditto	Suffered from complete procidentia uteri.
20	37, married.	Dec. 14th	Ditto	Multilocular; right.	Ditto	Twisted pedicle very adherent.
21	43, married.	1895 Jan. 17th	Ditto	Unilocular; left.	Ditto	—
22	44, married.	Feb. 22nd	Ditto	Partly solid.	Ditto	Suffers from mitral stenosis.
23	44, married.	Feb. 25th	Ditto	Papillomatous; right.	Ditto	Patient operated on for similar tumour on left side, Jan. 14th, 1893 (see Case 3).
24	21, single.	April 23rd	Ditto	Multilocular; right.	Ditto	Tumour reached to ensiform cartilage.
25	32, married.	May 21st	Ditto	Multilocular; left.	Ditto	—
26	16, single.	June 25th	Paddington Infirmary	Multilocular; right and left.	Ditto	Operated on by request of Dr. Hillier; tumour on left side larger than that on right.
27	41, married.	July 4th	Royal Hospital for Women and Children	Bilateral; right suppurating.	Ditto	Vermiform appendix closely adherent to cyst on right side.
28	29, single.	Aug. 10th	St. Mary's Hospital	Dermoid; right.	Ditto	Procidentia uteri.
29	39, married.	Aug 23rd	Royal Hospital for Women and Children	Multilocular; right.	Ditto	—
30	32, married.	Aug. 31st	St. Mary's Hospital	Papillomatous cyst; right.	Ditto	—
31	25, single.	Aug. 31st	Royal Hospital for Women and Children	Parovarian; right.	Ditto	—
32	56, married.	Sept. 10th	St. Mary's Hospital	Papillomatous; left.	Ditto	—
33	31, married.	Dec. 21st	Royal Hospital for Women and Children	Dermoid; right.	Ditto	Operation on fourth day of puerperium; tumour ruptured during labour and vagina was lacerated.
34	22, married.	1896 Jan. 7th	Ditto	Multilocular; right.	Ditto	—

TABLE SHOWING PARTICULARS OF FIFTY CASES OF OVARIOTOMY—*continued*.

No.	Age.	Date of operation.	Place of operation.	Nature of tumour.	Result.	Remarks.
35	31, single.	March 12th	Metropolitan Hospital	Parovarian; left.	Recovered	—
36	64, widow.	March 25th	St. Mary's Hospital	Multilocular; left.	Ditto	—
37	39, married.	April 13th	Royal Hospital for Women and Children	Parovarian; right.	Ditto	—
38	46, married.	June 2nd	Ditto	Bilateral; right suppurating, left dermoid.	Ditto	Much emaciated; tumour on right side, very adherent; drainage for twenty-four hours.
39	63, married.	June 8th	Nursing home	Multilocular; left.	Ditto	Patient suffered from diabetes mellitus; tumour had ruptured, and abdominal cavity contained much colloid material.
40	27, single.	June 29th	Royal Hospital for Women and Children	Multilocular; left.	Ditto	—
41	21, single.	July 14th	Ditto	Parovarian cyst; left.	Ditto	—
42	32, married.	Aug. 24th	St. Mary's Hospital	Papillomatous; left.	Ditto	Cyst was intra-ligamentous.
43	29, single.	Aug. 28th	Metropolitan Hospital	Dermoid; left.	Ditto	—
44	34, married.	Sept. 5th	St. Mary's Hospital	Suppurating cyst; right.	Ditto	Patient very thin and ill; tumour to navel; many adhesions.
45	27, single.	Sept. 8th	Ditto	Multilocular; right.	Ditto	—
46	36, married.	Sept. 29th	Ditto	Multilocular; left.	Ditto	Large amount of ascitic fluid.
47	39, married.	Oct. 27th	Royal Hospital for Women and Children	Broad ligament cyst; right.	Ditto	Tumour very adherent; right Fallopian tube inflamed.
48	56, married.	1897 Jan. 28th	Ditto	Multilocular; left.	Ditto	Twisted pedicle; universally adherent.
49	22, single.	Feb. 9th	Ditto	Parovarian; left.	Ditto	Tumour occupied the whole abdomen.
50	64, married.	Feb. 25th	Nursing home	Multilocular; right.	Ditto	Patient suffers from diabetes; tumour of left ovary removed June 8th, 1896 (see Case 39); tumour had ruptured and abdomen contained much glairy fluid.

but when such a death from such a cause does occur it is somebody's fault and indicates a flaw in the antiseptic precautions adopted. Shock is, perhaps, almost the only cause of death after abdominal operations that we cannot altogether eliminate. There is, however, nothing in the whole range of surgery so difficult as to be consistently clean. Instruments and ligatures are boiled and then transferred to a tray of carbolic lotion, from which the operator takes them as necessity arises, without the intervention of any assistant. Very little time is lost by this arrangement and the risk of infection arising from this source is minimised. The sponges are taken by the operator or his assistant from a bowl of carbolic lotion, and wrung out as required. The operations for the most part were performed in a small theatre which is used for general surgery of all sorts, and the patient was subsequently removed to the general ward.

All operators have their special fads, and personally I lay considerable stress upon a short abdominal incision and the ligature of the pedicle in three or more sections except when it is unusually narrow. A three-inch incision is generally quite long enough unless the abdominal wall is unusually fat or the adhesions are very numerous. Exposure of the intestines is thus avoided and the likelihood of the scar yielding is considerably lessened. By ligaturing the pedicle in more than two sections the chance of secondary hæmorrhage from slipping of ligature is practically eliminated. As to the value of irrigation of the peritoneum with boiled water or saline solution there is much difference of opinion. For my own part I very seldom employ it—only three times in fifty cases of ovariotomy, and in two of these cases it was had recourse to simply as the readiest method of removing large quantities of very tenacious ovarian fluid which had previously escaped into the abdominal cavity from rupture of the cyst. If the peritoneum be soiled by the escape of some of the contents of a suppurating cyst it can be cleansed quite as effectively by sponging as by irrigation, and in such cases it is not by any means always necessary to drain. I have had considerable experience in the operation for the removal of suppurating tubes and ovaries and have never had occasion to regret that irrigation was not employed. If the results obtained by one who does not irrigate the abdomen are as good as those obtained by one who does, then the claims of irrigation fall to the ground. The abdominal incision is closed by means of silkworm gut sutures and no iodoform is used. The application of iodoform is certainly of no use, though it probably does no harm. The wound is dressed for the first time on the eighth day and half the sutures are then removed, the remaining half being left *in situ* for another five or six days. Of the after-treatment of cases of ovariotomy there is but little to say. If the patient is infected at the time of the operation she will almost certainly die, and if she is not she will almost certainly recover. An aperient is given on the third day, and castor-oil is usually the drug administered because of its reliability, and when the bowels have acted the patient is allowed to have solid food. The amount of misapplied energy that has been expended on patients after ovariotomy is enormous and does not appreciably influence the recovery. It is the precautions that are taken during the operation and not those that are taken afterwards that determine the fate of the patient.

Weymouth-street, W.

WEST OF ENGLAND EYE INFIRMARY, EXETER.—The annual meeting of this institution was held on Oct. 29th under the presidency of Mr. G. Franklin, J.P. The treasurer's statement showed that the ordinary receipts amounted to £1257, as against £1272 last year, and the ordinary expenditure was £1317, as compared with £1239 of the preceding year. The medical report stated that there had been 2780 patients under treatment during the year, of whom 2412 had been discharged (being 603 cured and 1758 benefited), leaving 327 out-patients and 41 in-patients under treatment on Sept. 30th. The daily average number of in-patients had been 41. The chairman expressed regret at the continued inability of the committee to proceed with the new buildings owing to lack of funds, the building fund at present being only £433, and added that although everything had been done that could be done the present institution was seriously defective in many respects.

A CASE OF ANTEVERTED WANDERING LIVER.

BY RAYMOND CRAWFURD, M.A., M.D. OXON., M.R.C.P. LOND.,

ASSISTANT PHYSICIAN TO THE ROYAL FREE HOSPITAL AND TO THE VICTORIA HOSPITAL FOR CHILDREN, CHELSEA.

IN his "Treatise on Diseases of the Liver" the late Dr. George Harley wrote: "There is yet another possible source of error, though from its extreme rarity an error is unlikely to be committed. But, as the mistake is said to have once occurred, and it is quite possible it may occur again, it is but right that I should call attention to it—namely, the possibility of mistaking an anteverted small liver for an enlarged one." In the case that I record below, history has repeated itself to my own discomfiture. I have appropriated the term "anteverted" rather than "moveable" liver because the condition was rather one of axial rotation than of excessive mobility of the organ. The case will be seen to be one of peculiar interest, both because of the symptom complex and its post-mortem corroboration, and of the histological condition of the liver.

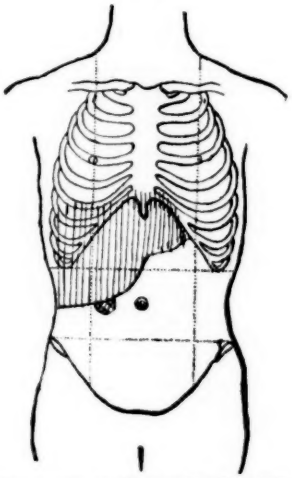
The patient, a woman, aged sixty-five years, attended the out-patient department of the Royal Free Hospital on May, 12th, 1897, and every subsequent week till July 7th, when she was admitted to the wards under my care. The following was the history of the patient when first seen. She complained of progressive weakness and pain all over, and there was yellowness and itching of the skin. The patient was married, but had had only one child, which was stillborn at full term; there was no history of parental tubercle or carcinoma; she had had twelve brothers and sisters, of whom only two were living, one brother having died from phthisis and the rest from unknown causes. When quite a child she had suffered with generalised dropsy; she did not know the cause of it but it was not associated with scarlet fever which she also had in childhood. The patient had had a left inguinal hernia for twenty-three years and hæmorrhoids for some years. Six months previously jaundice had set in insidiously with some abdominal pain but not of any severity. At the time she suffered a good deal from vomiting of a paroxysmal type, and was obliged to call in a medical practitioner, who ordered her to bed. In the course of a week or two the attacks of vomiting gradually subsided, but she lost flesh steadily. The jaundice became more intense; the appetite was completely lost; solids caused immediate nausea, so that only liquids were taken; since the illness commenced she had taken a quartern of gin daily, but prior to that she had never exceeded one and a half pints of ale a day. The bowels were at first constipated and the motions whitish and foul-smelling.

On May 12th she attended the out-patient department and was found to be in the following condition. There was intense obstructive jaundice of four months' duration. Liver dulness commenced at the sixth rib in the right mammary line and at the eighth rib in the mid-axillary line, and the edge could be felt at the level of the umbilicus. The enlargement appeared to be entirely of the right lobe; the surface was smooth; the edge was very hard and blunt; no nodules could be felt; and there was no pain on pressure. The gall-bladder could be clearly felt distended and projecting from beneath the edge of the liver about three inches to the right of the umbilicus.

Cancer of the liver was suspected, although no nodules could be felt and there was no marked tenderness or pain, but a primary seat could not be detected in the uterus or bowel, nor were there any indications of cancer of the stomach or head of the pancreas, so that the distended gall-bladder was fixed upon as the possible primary focus from which the disease had spread directly to the under-surface of the liver. The lungs were emphysematous and dry rhonchi were heard here and there on each side of the chest. For the next two months nothing special occurred beyond gradual emaciation and asthenia, with occasional attacks of acute pain in the right hypochondrium of a colicky nature. The constipation was relieved by a daily morning dose of mistura alba.

On admission to the wards on July 7th the patient was found to be much emaciated, and the conjunctivæ and the skin were a deep yellowish green in colour. The patient expressed herself as much more comfortable in bed than when getting about; she lay chiefly on her back, but could lie in any position. There were complete anorexia and frequent nausea; the mouth was very dry and there was a constantly unpleasant taste; the tongue was coated with a dry and dirty whitish fur; there was no pain and the patient rarely vomited after food. A good deal of troublesome flatulence was present; the bowels were now regular, but the motions were loose and white; the stomach was not distended, and no tumour could be felt there. The superficial abdominal veins on each side were enlarged; there was obvious fulness of the right hypochondriac and lumbar regions, extending into the epigastrium, but the abdomen as a whole was

FIG. 1.

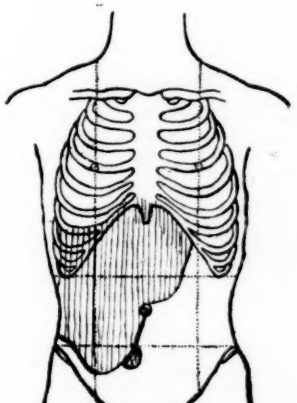


Representing condition on May 12th, 1897.

swagged over to the left, the intestines being apparently pushed *en masse* to this side; there was a large left inguinal hernia. The abdominal walls were very thin and flaccid, and the recti were separated; there was some tenderness on the right side of the epigastrium; a considerable tumour was felt reaching as low as the right iliac region, and extending upwards beneath the ribs. The percussion note was dull from the seventh rib in the mammary line to the lower edge of the tumour, which was felt to be the right lobe of the liver; its features have been already described. The gall-bladder could be felt clearly midway between the pubes and the umbilicus, a little to the right of the median line; the point of the finger could be readily inserted between the gall-bladder and the edge of the liver. The spleen could not be felt and was not enlarged to percussion. There was slight œdema of both legs, and there were some purpuric spots on the shins. The catamenia had ceased at the age of fifty-two years; for three months there had been a yellowish, quite odourless, discharge from the vagina. On examination per vaginam the cervix uteri was found to be atrophied; no induration was present; the fundus could not be felt, and the fornices were free. Per rectum no tumour was felt, but external hæmorrhoids were present. The urine was deep greenish in colour, of specific gravity 1008, and faintly acid; it contained no albumin, sugar, or blood, but bile pigment was abundant. The arteries were slightly thickened; the heart's impulse was feeble, but it was felt in the fifth interspace, just internal to the nipple; and the cardiac area and heart sounds were normal. The pulse was 80. The patient had had a cough for many years on and off; it was especially troublesome in the morning; the expectoration was yellowish and frothy. She was short of breath and her voice was hoarse and weak; the chest wall was much wasted, deeply jaundiced, and moved but little in respiration, though the movements were equal on each side. Behind, the lower ribs on the right side were much more prominent than those on the left; vocal fremitus was normal; there were a few palpable rhonchi. There was general resonance on percussion; the breath sounds were rather harsher over the right side than the left; expiry was

prolonged all over; there were generalised rhonchi, and the respirations were 16. On July 13th there was a good deal of dragging pain in the lower part of the back and also over the epigastrium and left hypochondriac region, which made the patient feel very faint. On the 16th there was similar pain confined to the right side of the abdomen. On the 20th, for the first time, the left lobe of the liver could be felt distinctly increased in size; the right lobe was steadily descending; the gall-bladder seemed more solid and fluctuation was not now so readily obtained; the abdomen measured 31¼ in. at the level of the navel. On the 27th it was noted that during the previous three days the liver had distinctly descended as much as two or three inches, and the right lobe was then only an inch above the middle of Poupart's ligament; the whole edge of both lobes could be plainly felt, and there was a small amount of moveable fluid in the flanks. The intestines were thrust still further over to the left side; the liver was painful on pressure; so was the gall-bladder; the edge could not be pushed up, and the abdomen was 30¾ in. at the umbilicus.

FIG. 2.



Representing condition on July 27th, 1897.

On the 30th there was no more pain, but the irritation of the skin was renewed; rhonchi were present all over the chest behind. The entry of air was not so free at the left base as at the right. The bowels opened regularly. The urine showed a trace of albumin but no casts and the ascites was increasing. By Aug. 5th the patient had become more and more feeble and emaciated. There were several purpuric spots on the legs; the temperature had undergone slight remissions for two or three days. Until the 16th there was steady progress of the weakness and emaciation; the patient complained of drowsiness and chilliness, but there was no pain. The abdomen then measured 32½ in. at the umbilicus; there was no further enlargement of the liver and no tenderness; the jaundice was deeper. By the 19th diarrhœa had set in and more bronchitis; the patient was given a starch and opium enema, which diminished the diarrhœa, and also some carbonate of ammonia and tincture of squills. By Sept. 3rd no material change had been noted, but there was a steady decline of strength; there was more diarrhœa; the whole abdomen was very tender, and the patient could not bear the lightest touch. On the 10th there was an increase in the diarrhœa; the abdomen was more distended; much bronchitis was present, and the patient was gradually sinking. Death took place on Sept. 11th.

Necropsy.—A post-mortem examination was made eight hours after death. The body was much wasted, the abdomen was distended, the skin and mucous membranes were deeply pigmented. On opening the thorax the left pleural cavity was found to be obliterated behind by old adhesions; a small quantity of serous fluid was discovered in the right pleura; the right lung contained a caseous nodule at the apex, but otherwise it was normal, and the bronchial secretion was bile-stained. In the heart the muscle was pale, flabby, and bile-stained, but the cavities and valves were normal. The abdomen was full of bile-stained serum, the intestines were driven over to the left side, the liver was completely anteverted and lying on the intestines in the long axis of the abdomen, the lower edge of the right lobe was not much more than a hand's breadth below the costal margin in the right mammary line, and the liver surface was smooth, and its consistence firm, especially at the edges. The weight of the organ was 54 oz. and its transverse measurement was 10 in. On section the liver was dripping with bile and deeply bile-stained, and the bile ducts within the liver were distended to the size of the little finger and full of thick, green bile. The liver was not specially mobile apart from the other viscera; there was no mesohepar and no apparent elongation of the ligaments. The gall-bladder was hypertrophied and much distended with deep-green bile, some of which was semi-solid, and its peritoneal sheath was thick and opaque. The cystic duct was distended, the hepatic duct was markedly so, and the common duct was not distended; the walls of the duct were normal; bile papilla was patent. The bile could be expressed readily from the gall-bladder into the intestine and a good-sized catheter could be passed throughout the ducts. There were no glands in the portal fissure or stones or adhesive bands. The spleen was slightly enlarged and firm, and adherent to the parietes by partially organised adhesions; there had been recent perisplenitis also. The stomach was not dilated. The pancreas was normal. Neither kidney was moveable.

Microscopical examination of the liver showed extensive dilatation of the bile ducts, and around these widespreading pericholangeal fibrosis. The greater part of the liver was markedly œdematous—a condition that could also be seen in the cirrhotic areas around the bile ducts. The atrophy of the liver cells was fairly uniform throughout the liver and not specially marked close around the distended bile-ducts. Here and there could be seen a suspicion of unicellular cirrhosis, but only in a few small and isolated areas; there were no pseudo-bile canaliculi and no intra-hepatic calculi could be seen. For the microscopical sections, all of which were admirably cut and stained, I am indebted to Miss Webb, M.B. Lond., curatrix of the museum of the Royal Free Hospital.

Remarks.—In searching through the literature of hepatoptosis I find two cases only in which the signs were almost identical with those in the above case but in each of these there was a great difference in the symptoms. The one is recorded by Peters,[1] in which the liver was found resting on its under surface with its long diameter parallel to the median line of the body, the right lobe being lowest and on a level with the anterior superior spinous process; and the other by Griffiths,[2] in which, in a man, aged fifty-four years, "the liver dulness extended from two fingers' breadth below the nipple to the crest of the ileum and partly into the iliac fossa, eight inches in the perpendicular right nipple line." Yet at the necropsy the organ was found to measure only ten inches transversely and eight inches in the antero-posterior direction, weighing fifty-six ounces. This unusual state of affairs, he says, was due to "the liver lying on its under surface in the lumbar region, the anterior edge of the right lobe being down in the iliac fossa. The organ appeared as if it had been partly rotated upon its own transverse axis—or, in other words, anteverted—so as to allow its upper surface to be felt through the abdominal wall below the ribs."

This was precisely the condition in life in the above case, the liver at first being anteverted and also rotated from right to left so as to bring the right lobe below. In this way the vertical upper limit of liver dulness remained unchanged until the liver descended *en masse*, and it was possible then to feel the edge of the left lobe of the liver. The post-mortem findings suggest that the jaundice that persisted from the very outset must have been due to kinking or torsion of the bile duct—indeed, bearing in mind the limits of distension of the ducts outside the liver, the evidence is almost demonstrative, the site of the kink being at the commencement of the common duct. In the absence of any severe attack of colic the constricting process would presumably have been a slow one. With the final descent of the liver on came ascites, which may reasonably be

[1] New York Medical Gazette, 1882, p. 412.
[2] Harley: Treatise on Diseases of the Liver, p. 54.

referred to kinking of the portal vein. The œdema of the legs may similarly have been due to a partial occlusion of the inferior vena cava from traction. Another point of interest is the position of the liver after death, in no way corresponding to the ante-mortem demarcation. The same circumstances led Wickham Legg[3] to disbelieve the existence of true hepatoptosis, except in mistaken diagnosis. Packard,[4] however, records a case in which before death the liver edge reached from nine to ten centimetres below the costal margin and post mortem it was in its normal position under the diaphragm and almost hidden by the costal cartilages. Landau[5] likewise points out that the diagnosis of hepatoptosis has not been conclusively established by necropsy. Yet the condition is only to be expected with the ascent of the diaphragm that occurs at death; and the reality of hepatoptosis has been confirmed both by abdominal section and post-mortem observation. It is difficult to say whether the descent of the liver was, as Glenard holds, merely a terminal incident of a general enteroptosis. No such condition was discerned either before or after death, but the readiness with which the intestines wandered into the left flank, and the existence of an inguinal hernia on the left side suggest such a possibility; also the liver, though so extensively displaced, was very slightly mobile apart from the intestines. On the other hand the stomach was normally situated and there was no associated mobility of the kidneys. Glenard mentions albuminuria and leucorrhea as conditions associated with hepatoptosis, and both were present in this case, but the albuminuria may well have been a secondary effect of the jaundice, and though leucorrhea may be a sequel of enteroptosis it can hardly be a direct sequel of hepatoptosis.

In any given case it is difficult to assign the exact causation to a moveable liver: in this case the abdominal walls were remarkably pendulous. Landau regards this as the main cause of hepatoptosis, and Graham[6] found a distinct relation to frequent pregnancy at short intervals, nearly all cases of non-traumatic origin occurring in women. The intestines act as a cushion which supports the liver in its position under the diaphragm by the even pressure of healthy abdominal muscles. But obviously flaccid abdominal walls do not alone produce hepatoptosis, as the former condition is very common, the latter very rare. Graham showed in the cadaver that, in the ordinary way, the ligaments were strong enough to carry the whole weight of the liver without the abdominal walls: simple opening of the abdomen seldom induced any descent of the liver. He also found that after opening the abdomen and cutting the suspensory ligament the anterior border of the liver descended about three inches, the right lobe more than the left, while the posterior margin remained fixed. This would necessarily produce anteversion such as occurred in the present case; yet post mortem we were unable to make out any elongation of the suspensory ligament, such as might result from increased traction by loss of the support of the abdominal walls. Winkler[7] supports the theory of elongation of the suspensory ligament, and Wassilief[8] has actually seen such a condition. It must be borne in mind, however, that there is no proof that this ligament is normally tense in the healthy subject. In my case there was no mesohepar, which, according to Hirtz, exists only in Meissner's imagination, and the other ligaments appeared perfectly normal. Faure[9] is disposed to regard the coronary ligaments and the connective tissue investment of the inferior vena cava as the true suspensory ligament of the liver; this would harmonise with the clinical condition of our case, the general descent being due to weakness of the coronary and lateral ligaments, the right lobe by reason of its greater weight descending first and most. Faure attributes the lengthening of the ligaments to a general nutritive defect leading to stretching of the fibrous tissues generally, and so causing both flaccidity of the abdominal walls and weakness of the ligaments. Descent of the liver has been laid to the charge of tight lacing, but this phantom tends to crop up whenever a disorder is specially incident on the female sex. Whatever may have been her habits in the green tree, there was no indication of such a cause in the sere and yellow leaf; moreover, as Graham remarks, tight lacing leads to errors of form rather than of position of the liver.

In most of the recorded cases, as in this, the onset of the symptoms has been insidious; sudden onset is usually, but not always, traumatic, and is marked by the familiar symptoms of severe biliary colic. There has usually been dull aching pain, worse on exertion; my patient referred her most constant pain to the lower part of the back and between the shoulders, and described it as dragging. Pain and tenderness over the liver only became a prominent feature in the late stages, when the œdema present must have exerted a great distending force on the liver. The intense general abdominal pain of the later stages was probably referable to the recent peritonitis, which was found over the spleen. The dragging pain was always worse on exertion, but not completely relieved by recumbency.

The histological characters of the liver are peculiarly definite. The most striking feature is the widespread atrophy of the liver cells; apparently this is not a purely mechanical process, as the atrophy is equally marked away from the distended bile-ducts as in their immediate environment. No doubt the degree of œdema manifested under the microscope would have greatly generalised the pressure, but much of the atrophy is probably due to icteric necrosis. It is surprising that so extensive a cellular atrophy should not have led to some degree of secondary connective tissue overgrowth, but such is conspicuously absent, only the most delicate capillary network being visible between the residual liver cells. Such a condition would suggest a somewhat rapid atrophy of the true liver cells. The limitation of the increased fibrosis to the bile-ducts is in this case indisputable. Respecting the œdema it must be borne in mind that not only was the *vis a tergo* diminished by the assumed constriction of the portal vein, but likewise a block may have existed ahead from traction on the hepatic vein or the inferior vena cava. It is true that much of the lymph drainage of the substance of the liver passes out at the portal fissure, and may have been involved in the local torsion, but obviously there must have been other channels of efflux patent or jaundice could not have occurred. Weber[10] surmises that the fibrosis about the bile ducts is due to organisation of scavenger cells that have been attracted to the part by the necrosed liver cells. This can hardly apply to the present case, as the atrophy is uniform and universal, while the fibrosis is strictly localised to the bile ducts. Weber quotes some experiments of Nasse to show that the effect of ligature of the hepatic duct is to cause atrophy of the liver cells, and that if the obstruction be removed the liver cells are capable of undergoing some degree of regeneration. Of the former proposition there can be no doubt, but in the present case the persistence of the obstruction precluded a confirmation of the latter.

Wimpole-street, W.

[3] St. Bartholomew's Hospital Reports, 1877.
[4] Transactions of College of Physicians of Philadelphia, 1896.
[5] Deutsches Archiv für Klinische Medicin, 1875, Band xiv., Heft 1.
[6] Transactions of the American Association of Physicians, 1895.
[7] Zur Casuistik und Aetiologie der Wanderleber, Archiv für Gynäkologie, 1872, Band 4; p. 145.
[8] Wiener Medizinische Blätter, 1880, No. 30, p. 785.
[9] Thèse pour le Doctorat en Médecine, Paris, 1892.
[10] Brit. Med. Jour, vol. i., 1896.

ADMINISTRATION OF ANÆSTHETICS THROUGH A TRACHEAL WOUND.

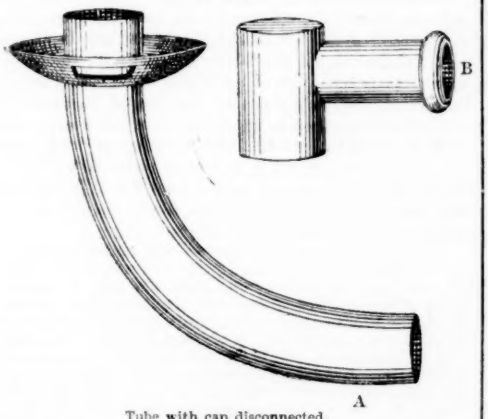
BY THOMAS ANNANDALE, M.D., F.R.C.S., F.R.S.EDIN.,
REGIUS PROFESSOR OF CLINICAL SURGERY, EDINBURGH UNIVERSITY.

IN March, 1887, I published in the *Edinburgh Medical Journal* a short paper upon Preliminary Tracheotomy as an Aid to Certain Operations. In this communication I described and figured a simple appliance for keeping a patient under the influence of chloroform or ether in connexion with operations which necessitated a previous tracheotomy. Since then I have used this appliance from time to time with success, but having found that the india-rubber tube connected to the tracheotomy tube was sometimes apt to get twisted at its point of connexion and so interfere with respiration, and also that matters coughed up were not readily expelled through the long tube, I have had my apparatus improved so as to lessen these risks. This modified appliance was recently employed with perfect success in a case of excision of the entire larynx and portion of the trachea together with a large and vascular thyroid tumour, the patient being now quite convalescent.

This improved apparatus is as follows:—1. An ordinary full-sized silver tracheotomy tube having its upper end extended

for about half an inch beyond the shield (see Fig. 1, A); 2. A silver cap (Fig. 1, B), having a short tube of the same metal projecting at right angles from it and to which one end of an indiarubber tube is connected. In Fig. 2 is shown the cap fitted on to the tracheotomy tube. The cap fits easily and can be at once lifted off the tracheotomy tube and also turned round so as to allow the attached indiarubber tube

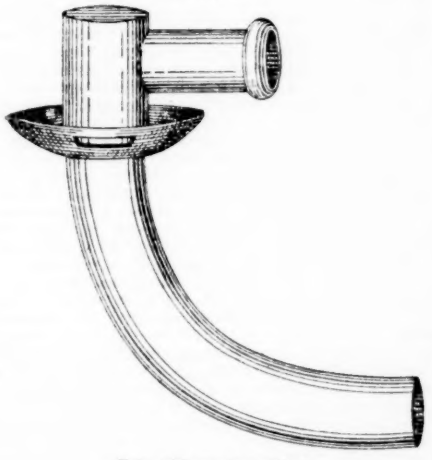
FIG. 1.



Tube with cap disconnected.

to project on either side which ever may be found most convenient for the administration of the anæsthetic. 3. A portion of indiarubber tubing. The length of this should be about two feet, but it may be used shorter or even a little longer, and the diameter I prefer is about half-an-inch. 4. An ordinary glass tumbler or other similar receptacle with a small piece of lint or absorbent wool placed at the

FIG. 2.

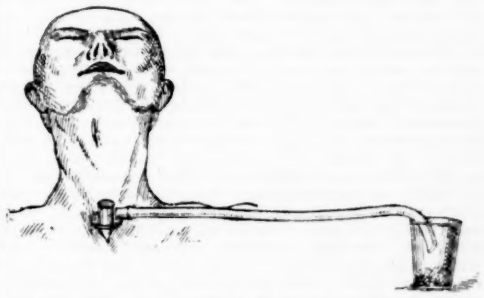


Tube with cap in position.

bottom upon which the chloroform or ether is from time to time sprinkled. In Fig. 3 the whole apparatus is shown in position.

The anæsthetic—I prefer chloroform—may in the first instance be held over the tracheotomy tube with the cap off, and when the time for the operation has come the cap with attached indiarubber tube is put on and the anæsthetic inhaled from the tumbler, the anæsthetist standing or, if he prefers, sitting well away from the operating table, holding the tumbler in one hand and with the other steadying the tube. To prevent blood or vomited matters passing into the air-passages during the operation the introduction of a piece of sponge or other plug into the trachea above the tracheotomy wound is usually satisfactory but in the case of the excision of the entire larynx already referred to I adopted a thoroughly effective and as far as I know original method and I am inclined to think that this plan may be used in other cases. The procedure was to pass round the trachea immediately above the tracheotomy wound an indiarubber cord and by means of it to ligature the canal temporarily so as completely to prevent the entrance of any fluids or other matters into the air-passages. When the ligature was removed at the completion of the operation above referred to the walls of the trachea did not appear to have been injured by it. It is true that the condition of the tracheal rings in some instances might prevent such a ligature being perfectly

FIG. 3.



Cap connected with indiarubber tube dipping into vessel containing wool and anæsthetic.

effectual, but I am of opinion that this means of temporarily closing the trachea is worthy of consideration and trial.

The advantages, then, claimed for the appliance which I have figured are: 1. It is simple and at the same time effectual. 2. The cap being moveable can if necessary be at once disconnected from the tracheotomy tube, so as to allow mucus or other matters to be more easily expelled from the air passages. This mobility also allows the cap and connected indiarubber tube to be turned round to either side. 3. It allows the anæsthetic to be administered at some distance from the patient, and so does not interfere with the operative procedure. 4 The anæsthetic when inhaled through the long tube is not likely to be so irritating to the air passages as when it is more directly inhaled through the tracheotomy tube itself.

Edinburgh.

CHRONIC MENINGITIS AS A SEQUELA OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.

BY EDMUND HOBHOUSE, M.D. OXON., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO THE SUSSEX COUNTY HOSPITAL, BRIGHTON.

THE following case is probably an example of what Sir William Gowers has described as chronic internal pachymeningitis due to the epidemic disease; it is not described, so far as I can discover, as an ordinary sequela, and must certainly, I think, be rare in such a well-marked form, closely resembling the form of pachymeningitis due to caries and suppuration.

The patient, a man aged twenty-one years, always healthy but for this trouble and with a good family history, had an attack of cerebro-spinal meningitis during a severe epidemic at the Cape in 1877.[1] He had one relapse within three weeks, but otherwise recovered well, though there was a distinct history of impaired vision during convalescence, from which he gradually recovered. After that he was in good health up to fifteen years of age and led an outdoor life, joining in athletics and playing football. At about the age of fifteen years he began to notice pain in the left hip which at first only came by day and after exertion, but latterly was most severe at night. For two years this

[1] Hirsch (Geographical Pathology, vol. iii) asserts that there have been no outbreaks in the southern hemisphere, but I believe there is sufficient evidence as to the occurrence of this one.

continued to get worse and he took to his bed. The right leg became affected and the muscles of the thighs began to waste. In August, 1887, when nineteen years old, he had measles, and after this what was called intermittent fever for two months. The temperature ran up to 104° F., at times with vomiting and severe pain. The legs became very rigid and the calves began to waste; he was treated by dry-cupping, wet-cupping, and postural extension of the nerves, and owing to the pain was kept under morphia almost continuously from August to January. At one time during this period he had severe pain in the occiput with, he believes, some retraction; pressure on the spot sent the pain down the back. He had some difficulty with both bladder and rectum, and also had priapism. For about a year he had to have enemata. He never had any affection of the arms. He improved after this—in 1888—but had one severe relapse from catching cold. When admitted into St. Thomas's Home, in May, 1890 the legs were very wasted and he could just walk 20 yards with crutches. There was no sign of any vertebral disease, and except for the wasting of the legs, which affected all the muscles evenly, the patient was well nourished. The arms were unaffected. The muscles reacted feebly to both currents and with slight reaction of degeneration. The knee reflexes were exaggerated; the plantar reflexes were brisk, especially the left; and there was no ankle clonus. The legs were very rigid and could only be flexed with great difficulty and pain. There were fairly frequent attacks of severe pains radiating all down the legs. Sensation was not much affected. There was constipation, but no very definite affection of the sphincters. The eyes, which Mr. Lawford kindly examined, showed distinct traces of previous optic neuritis, with narrowing of the vessels and slight pallor. Vision was not seriously impaired, though he had noticed increased defect after his illness in 1887. There was no defect in the movement of the eyes. There was no other paralysis. Massage and the constant current produced no effect apparently, but he began to improve after taking strychnia. Gradually the pains left him, and by January, 1890, he had been walking for four months and was fairly free from pain for three months. The nutrition of the muscles had improved immensely. He still had pains, which were referred to the sciatic nerves, and were worse after exercise; he also had occasional pains in the eyes and head. Subsequently he recovered sufficiently to return to the Cape and resume his life there, and he reported himself in good health six months later.

Remarks.—This case shows how long the effects of cerebro-spinal meningitis may last; it is clear, I think, that the whole trouble dates from the attack as a child, for the pains never really left him, though limited to the legs. Probably the special incidence on the lumbar region was due to the gravitation of the inflammatory products to the lower part of the cord, leaving a permanent thickening of the membranes. The entire escape of the arms is interesting, though not very unusual; *a priori* one would have expected that some lodgement of the inflammatory process might have occurred at the cervical enlargement.

It is a question whether the so-called measles in 1887 may not have been a recrudescence of the original disease as rashes of different kinds are common in its course; but, on the other hand, serious meningeal affections are not very rare after measles and would be specially liable to occur where the meninges were already much damaged. In any case the almost complete recovery after twice-repeated inflammatory attacks, extending apparently from the optic tract to the cauda equina, is noteworthy.

I must express my thanks to Dr. Edmunds for his kindness in allowing me to publish this case, which only came under my care during his short absence.

Brighton.

VACCINATION WITH CALF LYMPH.—At a meeting of the Redruth Board of Guardians, held on Oct. 29th, a communication was read from the Local Government Board recommending that sixpence per case extra for vaccinations performed with calf lymph would be a sufficient remuneration for the medical officers. The Board added that the guardians themselves could not supply calf lymph except in the case of an outbreak of small-pox. It was eventually resolved that sixpence be allowed in each case where calf lymph was used, although one guardian moved that only threepence should be given.

PROFESSOR EDINGER'S THEORY OF THE CAUSATION OF SOME NERVE DISEASES.

BY R. CUNYNGHAM BROWN, M.B., B.S. DURH.

INTERESTING papers on the changes in the spinal cord in pernicious anæmia[1] and in profound anæmia[2] from the pens of Professor J. Michell Clarke, Dr. Taylor, and Dr. Semple, in which the morbid conditions are ascribed: (1) probably to some toxic condition of the blood, and (2) to a tendency to hæmorrhage, justify one—if justification be necessary—in laying before the readers of THE LANCET a short *résumé* of Professor Edinger's beautiful "Theory of the Causation of Some Nerve Diseases, in particular Tabes and Neuritis."[3] In particular, also, a letter by Mr Percy Furnivall[4] on certain affections of the nervous system illustrates and is at the same time elucidated by this theory.

Professor Edinger first discusses the surprising variety in the causes of nerve disease; the fact that any of these diseases may produce at one time one and at another a quite different disease; the difficulty in explaining how so many diseases are progressive, and continue to develop long after the primary injury has passed away; the column degenerations which result in animals after long-continued rotation on a turn-table; the degenerations which accompany pernicious anæmia and Addison's disease; and the question why in Friedreich's disease the posterior and lateral columns gradually degenerate, and why to these are so often added bulbar and other symptoms. To these and many other questions it has been impossible hitherto to give a satisfactory answer, and it is to their adequate explanation that this theory is directed.

The tissues of the body, the separate molecules indeed which together form the cells, exist together in a condition of equilibrium. When one part becomes damaged it becomes weaker, loses its vitality, and becomes pressed upon and overgrown by its sounder neighbours. That such conditions of disturbed equilibrium obtain continually and in all parts of the body is undoubted. This fact, established first by C Weigert,[5] and quite independently of him by W. Roux,[6] has been shortly described by the latter as "the struggle of parts of the organism." From Roux's important work we note (1) that this struggle of parts around a cell commences when in that cell the metabolic substance is more quickly consumed than restored; and (2) that Roux believed that the absence of impulses—the term impulses being used merely to designate, not to explain, certain processes—debilitated certain cell substances, and particularly in their power of assimilation. During development this struggle of cells and structures plays no small part. General pathology offers many examples. Weigert has already shown how in interstitial nephritis, in myocarditis, and also in the so-called grey atrophy of the central nervous system, the ground tissues in the first instance degenerate, and then the weakened tissues, pressed upon, overgrown by the connective tissue,—in the last-mentioned case by the neuroglia,—become destroyed. As one of the most important phenomena of the struggle Roux specified the influence of entering impulses. Now Weigert has shown that the conception of "impulses" is in no way essential and that the simpler idea of physical pressure is more correct. According to Weigert neither the cell nor the organ are strengthened by impulses.

All diseases which attack the nervous system cause damage only through their influence on nerve cells or their processes. These injuries, whether transitory or permanent, never attack the cells alone or the fibres alone. The neuron, the compound of cell, axis cylinder, and terminal branching, is one coherent entity. The degeneration of the fibre which follows destruction of its cell of origin has long been recognised. The

[1] Brit. Med. Jour., Aug. 7th, 1897.
[2] Transactions of the Medico-Chirurgical Society, 1895; and THE LANCET, April 17th, 1897.
[3] Klinische Vorträge, Leipzig, 1894: Eine neue Theorie über die Ursachen einiger Nervenkrankheiten, insbesondere der Neuritis und der Tabes.
[4] THE LANCET, May 29th, 1897.
[5] Eulenburg's Realencyklopädie, 1880 and 1885.
[6] Der Kampf der Theile im Organismus, 1881.

changes which take place in the fibre as the result, not of destruction, but merely slight injury to the cell, are on account of the inadequacy of our methods less known. Forel, however, first called attention to the fact that the cell itself suffers when separated from its fibre, even to complete atrophy if the division fell close to the cells. Hirsh found changes in the cells of the facial nucleus twenty-four hours after division of the peripheral facial nerve. These, however, are relatively coarse conditions in which the cells or fibres had been seriously damaged. Now during the activity of the nervous system certain bodies become used up which must again be restored. The methods which will be able to demonstrate the purely morphological changes which take place during the activity of a cell are as yet only in the initial stages; but it is known, through the investigations of Daschkiewicz Hodge, and Hirsh, that active cells look essentially different from those which have rested and also that the fibre participates in the change. If the anabolism equals the katabolism the cell will continue to live and perform its functions, but if not the weakened cell, overweighted by its sounder neighbours, will die. If, therefore, such conditions exist as an abnormally great performance of function with merely normal restorative potentiality, or normal function with abnormally low restorative potentiality, one should expect to find signs of degeneration equivalent to those met with as the result of gross mechanical disturbances.

That prolonged, forced exertion in any separate muscle-group can lead to its paralysis, and that the paralysis is atrophic, has long been known These have always been regarded as cases of muscle atrophy as the result of neuritis. The hammer palsy of young smiths, the paralysis of muscles of the hand in cigar rollers (Cöster), the paralysis of separate extensors of the forearm in young drummers (Nürnberger Bruns), in fact, all the manifold "occupation-paralyses" furnish examples of nerve failure through exhaustion. This nerve failure may happen even in the healthy as the result of extreme over-function, but the majority of cases observed show symptoms of malnutrition. Paralysis in the muscles supplied by the radial nerve has been observed after prolonged crochet-work in an anæmic woman, extensor paralysis in a half-starved cane-plaiter, and many others too numerous to mention. One can understand, therefore, how Oppenheim, Siemerline, and Cöster found in the peripheral nerves of all people who had died from exhausting diseases and in those of very old people degenerated fibres. Now, no single nerve element can degenerate without others becoming indirectly affected. To take an instance from neuro-pathology, consider for a moment atrophy of the facial nucleus. The resulting paralysis of the facial muscles will gradually affect the bony tissues of the skull, and deformities and inequalities are brought about which later will react on the configuration of the brain. The flow of blood and lymph through the affected parts will be altered, and so changes will be initiated which must later be equalised by alteration in other structures. In the cases of "occupation paralysis" this co-relation of parts must take effect, and we should expect some participation of the sensory paths. Ernest Remak reports on many cases of pain and sensory disturbances in these cases.

The participation of the sensory paths will naturally vary with the intensity of the process and the extent to which sensory fibres are mixed with the motor. This condition of deficient restoration causes not only degeneration in the peripheral nerves, but also in the central nervous system. In anæmia, pernicious anæmia, after many fevers, and during many exhausting conditions, changes are observed in the spinal cord. By the term "grey degeneration" one recognises pathological forms originating in the degeneration of nerve elements, and the growth into their place of the interstitial tissue Examination of the region of the entering posterior roots in cases of fresh tabes shows that long before the proliferation of the interstitial tissue takes place the wasting of the medulla and the degeneration of the axis cylinder have occurred. The degenerated parts, in the cases of pernicious anæmia, anæmia, ergotin poisoning, &c., are found most often in the posterior columns, much less frequently in the pyramidal or cerebellar tracts. Now it is generally accepted that these changes depend on the action of some toxic substance, and it is by no means asserted here that such toxic action may not exist, but it does not explain why in most cases the posterior columns are principally affected, nor why only some of those suffering from pernicious anæmia, &c., become affected in this way and others escape. To explain these matters according to the toxic theory a supplementary hypothesis must be added of "susceptibility of parts." Now it is *a priori* inevitable, according to Professor Edinger's theory, that those parts should first degenerate which suffer the heaviest demands upon their function.

Take tabes as an example. If one leaves out of count those automatic centres, isolated ganglion groups, which stimulate movement and take up sensation and which come into use mainly for the intestine, one finds that there are nerve structures whose function is continually, or, at any rate, much more frequently, in demand than that of others—those, namely, which coördinate muscle sensation and which are necessary for the maintenance of the equilibrium of the body. The almost perpetual demands upon this apparatus, and particularly from the legs and trunk, are at once apparent. Now, according to this theory, this tract should be among the first to suffer, and disturbance of equilibrium, ataxy should be one of the first symptoms. And that this is so is known by everyone. But the theory also demands that this ataxy should be of more frequent occurrence in the active than in those who lead a sedentary life. This also is borne out by facts. Statistics prove the relatively greater frequency of tabes in men than in women. The proportion in Prussia and Russia is about eight to one. The fact that tabetic symptoms begin almost regularly in the legs and much later affect the arms is only one consequence of the continuous coördination required in progression and the maintenance of equilibrium as contrasted with the intermittent use of the arms. The form called "higher tabes" will probably be found to depend on the occupation of the individual. The greater demands upon those sensory nerves which serve the muscle apparatus than upon nerves of pure sensation explains the relative infrequency of sensory troubles in tabes. The almost constant sensory stimulation of the sole of the foot and the frequent irritation of the skin by the clothes explain the anæsthesia of the sole and the patchy anæsthesia of the skin found in tabes. These patches also preponderate in places where the skin would be subject to more frequent stimulation. But mechanisms which perhaps more than any of those mentioned suffer continued demands are those associated with the light reflex and accommodation. The first-named, that of the light reflex, is during waking moments continually in action, and its early disappearance is what the theory would lead us to expect. A beautiful illustration of this was afforded by a tabetic patient under the care of Professor Edinger, in whom the light reflex was absent only on one side The patient was a watchmaker, and had used this eye incessantly at his work The accommodation is, as one would expect, affected if at all much later. The order in which the external muscles of the eye are affected is also explicable by the theory. The occurrence of optic atrophy, bladder trouble, lingual and laryngeal paralyses, the affection of the peroneal muscles (*pied bot tabétique* of Charcot) and many other points in the symptomatology of tabes, all admit of a satisfactory explanation by the theory, but space does not permit of their discussion here. In particular, however, these frequently occurring anomalous cases of tabes, where for a long time, or even through a whole life, only one symptom of tabes is present, are elucidated. The progressive ophthalmoplegia of Westphal also and the various transitionary and compound forms of nerve disease are explained by and illustrate this theory which, though it leaves many questions still unanswered, elucidates many points hitherto obscure.

The application of the theory to Professor Michell Clarke's cases is manifest. The column degeneration as the result of the performance of function in people suffering from malnutrition has already been sufficiently discussed, and the hæmorrhages are explainable by Roux's corollary on "the co-relation of parts," from which under certain conditions vessel changes were to be expected. In this connexion a significant fact is noted in Case 2: "No hæmorrhages were noticed in the other organs post-mortem." This itself would seem to indicate that the hæmorrhages were secondary to changes in the nerve structures of the spinal cord itself. In the two cases mentioned by Mr. Furnivall it is to be noticed, firstly, that in his own case extreme demands upon a normal restorative power produced anæsthesia of the feet and in other cases ataxic gait, which passed off after rest; and secondly, that in the case of Mr. Furnivall, senior, with in all probability a diminished power of restoration, the sensory and motor disturbances ensued upon slighter exertion and passed off much less quickly.

It is to be regretted that in a paper of this length only

scant justice can be done to Professor Edinger's theory, but it may be hoped that this brief account will show that the theory deserves serious consideration.

Holmfirth, Yorks.

A CASE OF TEDIOUS LABOUR FOLLOWED BY DOUBLE PHLEGMASIA ALBA DOLENS AND GANGRENE.

BY FRANK M. WILLCOX, M.B., C.M. EDIN.

THE patient was a primipara and thirty-four years of age, sparely built, weakly, and very anæmic, with feeble circulation, but no organic cardiac change. She suffered intensely with cold feet and hands and was treated during pregnancy for anæmia. The labour was very tedious, lasting forty-eight hours after she was first seen. On abdominal examination occipito-posterior presentation was diagnosed. On vaginal examination the os was found to be about the size of a two-shilling piece, and it dilated very slowly. The labour produced considerable exhaustion and was ultimately finished instrumentally; unfortunately, owing to the rigidity of the parts, the perineum was torn, but it was at once sutured and no blood was lost. After labour the pulse was 84, weak and thready, but regular, and the temperature was slightly subnormal. Stimulants were given and external warmth was applied. During the first fortnight of the puerperium the patient did well; the perineal tear healed, the temperature was never above 99·8° F., and she rose on the twelfth day. On the evening of the sixteenth day she was seized with violent pains in the left leg, and on seeing her next morning it was evident that phlegmasia alba dolens had set in. The leg was swollen, shiny, and white, the superficial veins were much distended, and in Scarpa's triangle and the popliteal space the limb was very tender to the touch. Unfortunately during the night an unskilled nurse had freely rubbed the leg to relieve the pain. There was no rise in temperature or abdominal tenderness, neither was there any evidence of uterine or vaginal sepsis. The usual treatment was adopted The patient was kept absolutely at rest, the foot of the bed was elevated, anodyne applications were used, the limb was enveloped in cotton wool, and external warmth was applied. The child was weaned; cardiac tonics and light nutritious diet were ordered. During the next few days the patient was easier, but complained of pain in her heel and toes. On the twentieth day discolouration was observed over the region of the great and second toes; this gradually deepened and extended, involving the foot as high as the transverse tarsal joint. The patient was fairly comfortable, however, till the evening of the twenty-third day, when there was an acute exacerbation; she was very restless, and the temperature rose to 100·6°. On the following morning the great and second toes and part of the dorsum of the foot seemed benumbed, cold, and insensible to the touch. Gangrene had set in. The pain was very severe from this time until death, necessitating hypodermic injections to procure rest. On the twenty-seventh day the whole abdomen became distended and tympanitic, the breathing was embarrassed, and the pulse was very feeble and irregular. Strophanthus and strychnine were freely exhibited and the patient rallied and improved daily. The tympanites disappeared, the pulse became stronger, the leg gradually became smaller, and the appetite improved, when on the thirty-third day the right foot began to swell and phlegmasia of that leg developed. The patient thereupon rapidly sank and, refusing all form of nourishment, died on the thirty-sixth day after delivery.

The interest of this case was in the rapid onset of gangrene and the development of phlegmasia in the right leg when the patient seemed to be recovering, as the left leg was becoming smaller and the tympanites had disappeared. There was absolutely no sign of sepsis of the pelvic organs, showing clearly that the illness was entirely due to the feebleness of circulation. This case strikingly illustrates the great importance of careful and prolonged treatment of anæmic patients with weak circulation all through pregnancy and especially during the later months.

Brechin, Forfarshire.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriae collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

SEAMEN'S HOSPITAL, GREENWICH.

A CASE OF PNEUMONIA FOLLOWED BY ABSCESS OF THE LUNG, EMPYEMA, AND DEATH WITH HYPERPYREXIA; NECROPSY.

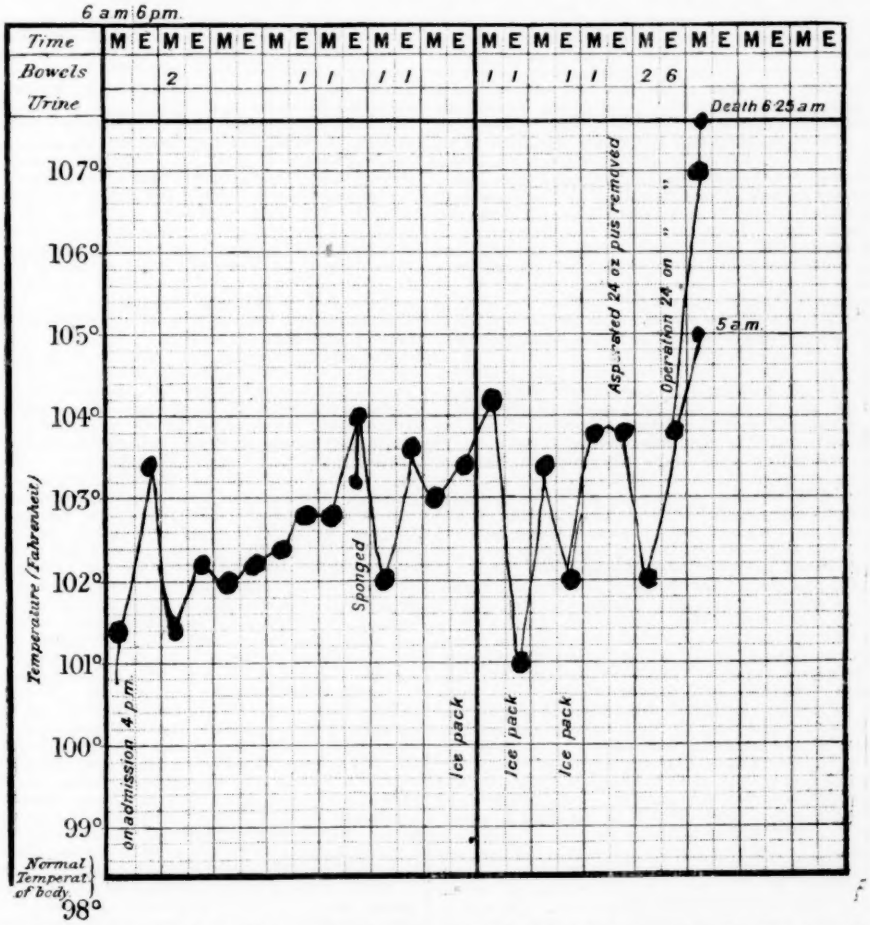
(Under the care of Dr. J. CURNOW.)

FOR the notes of the case we are indebted to Mr. A. E. Griffin, house physician.

The patient, a man aged thirty-seven years, was admitted into the hospital on Sept. 17th with a two days' history of illness, starting with pains in the back and dyspnœa; there was neither cough nor rigor. The patient was stated to have been drinking heavily for three weeks. On admission the temperature was 101·4° F., the pulse was 114, and the respiration was 36. The tongue was furred and white. As regards the lungs, the percussion note was good on both sides anteriorly and on the right side posteriorly. The breath sounds were harsh, but there were no adventitious sounds; vocal resonance and vocal fremitus were normal. On the left side posteriorly the percussion note was impaired from the angle of the scapula, the breath sounds were weak and accompanied by a little dry friction at the extreme base, and vocal resonance and vocal fremitus were normal. The liver was enlarged. The cardiac dulness was decreased, and the sounds of the heart were normal but feeble. On the 18th the temperature was 103°. The patient complained of pain in the left side; the sputum was viscid and slightly rusty. At the left base the percussion note was dull over the lower lobe, the breath sounds were weak with a few râles, and there was coarser friction at the base, this being heard also in the axilla. The urine was acid and of specific gravity 1020; it contained no albumin. On the 19th it was noted that vocal resonance and vocal fremitus were absent over the left lower lobe; the breath sounds were weak and accompanied by much rhonchus—in fact, rhonchus was universal. On the 20th expectoration was typically pneumonic and more profuse, the temperature still keeping about 102 5°; the respiration was 32. The patient was wandering and trying to get out of bed. On the 21st a small patch of tubular breath sounds was noted at the level of the left angle of the scapula; no râles were noted; below the angle the breath sounds were weak, but audible to the base; no friction was heard. On the 22nd, the eighth day of illness, the patient had been delirious all the previous night. The tongue was dry and red. Tubular breath sounds were noted from the apex of the left lower lobe to the angle of the scapula; below the breath sounds were weak to the base. The temperature dropped to 101·2° at 10 A.M. and the respiration fell from 44 to 38. In the evening the former rose to 103·6° and the latter to 50, the patient being still delirious. The temperature gradually rose to 105° on the 23rd and he became somewhat comatose; the ice pack was given for one hour. On the 24th he was in much the same condition, the physical signs were unaltered, the ice pack was again given, and he improved in it. On the 25th he was more comatose and was ice-packed for three hours The temperature fell to 101° and the respiration from 54 to 44. He recognised people for the first time for twenty-four hours. The physical signs still remained unaltered. On the 26th he sweated profusely, the skin being moist, the face pallid, and the tongue brown and dry. The temperature was 103·3°, the respiration was 54 and the pulse was 104. There was no alteration in the physical signs posteriorly, but some rough pleuro-pericardial friction was noted anteriorly. After consultation with Mr Duffett the acting principal medical officer, the patient was aspirated immediately below the angle of the left scapula, and twenty-four ounces of thin puriform, odourless fluid were removed. Under the microscope a stained specimen showed pus cells, with staphylococci and streptococci and also a few pneumococci. The

condition after aspiration continued to be much the same, the temperature fell from 103·6° to 102° and the respiration from 52 to 44. On the 27th there was much more coma, but the physical signs were unchanged. Mr. Duffett incised the pleura in the eighth interspace in the mid-axillary line, removing twenty-four ounces of pus, and a large drainage-tube was inserted. No anæsthetic was given. The coma increased, and the patient died at 6.25 on the morning of the 28th, the temperature gradually rising to 107·6°, the respiration to 66, and the pulse to 160.

Necropsy.—A post-mortem examination was made on the 29th, when the right lung showed bronchitis and congestion of the lower lobe with some slight recent pleurisy. The left lung showed an adherent pleura in the axilla and posteriorly over the lower lobe. After removal from the body the whole



of the upper half of the left lower lobe was found to be pneumonic. Two inches from the apex posteriorly there was an abscess cavity two inches by one inch communicating freely through a large opening in the pleura with the pleural cavity. The lower part of the lobe was congested, but had not collapsed. No communication could be made out with a large bronchus. The heart showed recent pericarditis with dilatation of the cavities, the liver was fatty and enlarged, the spleen was large and congested, and the kidneys were fibroid. No examination was allowed of the brain.

Remarks by Mr. A. E. GRIFFIN.—Cases of pneumonia followed by abscess of the lung seem to be sufficiently rare to merit reporting. Sturges and Coupland[1] state: "This is a most rare event in the after-history of acute pneumonia; it was found in but one case out of 144 examined after death." The same writers quote Traube[2] as mentioning a case. Wilson Fox[3] also mentions a case reported by Huss. In the case reported above it may be pointed out that though on the fourth day of illness the sputum was pneumonic and on the sixth day typically so, it was not until the seventh day that tubular breath sounds were noted. Again, though on the twelfth day of illness twenty-four ounces of pus were removed, yet even before aspiration breath sounds were heard to the extreme base. The pus removed by aspiration had no odour and at no time was the sputum or breath offensive. The change in the physical signs noted on the seventh day may have been due to the rupture and emptying of the abscess cavity into the pleura, but the physical signs at the base remained unaltered and there were no signs of pneumothorax. That there was some accompanying effusion was recognised, but only after the delay in the crisis, with sweating, coldness of the limbs, and increasing coma, was an empyema suspected.

[1] Pneumonia, second edition, p. 88.

[2] Ges. Beiträge, ii., p. 530.

[3] Diseases of the Lung.

NURSES' HOME AT BARRY.—At a meeting of the Barry Nursing Association and Accident Hospital, held on Oct. 27th, under the presidency of Mr. G. Neale, J.P., L.R.C.P. Edin., the treasurer announced that nearly £1000 had been subscribed by voluntary contributions for providing a Royal Jubilee Nursing Home for the district in connexion with the jubilee celebration movement. The erection of the building will shortly be proceeded with.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Empyema of the Antrum in an Infant.—Acromegaly.—Calcifying Pericarditis.—Salivary Calculus.—Traumatic Neuritis.

A MEETING of this society was held on Nov. 2nd, the President, Dr. PAYNE, being in the chair.

Mr. D'ARCY POWER showed a specimen of Empyema of the Antrum in a Child eight weeks old. The child was admitted into the Victoria Hospital on July 29th, 1897, in a very wasted condition with an abscess discharging at the lower part of the right eyelid. Examination with a probe showed that there was an area of dead bone on the upper surface of the superior maxilla. Pus was also exuding from the alveolar border, but no definite opening could be detected. There was a history that both sides of the face had been bruised at birth during delivery by forceps; but it was not till the child was about a month old that the abscess was noticed. It had been discharging ever since. On admission to the hospital the abscess was freely opened and granulations were scraped away, but the child died thirteen days after, and at the necropsy a small abscess was found in the right lung. The specimen showed that the bone had undergone very extensive necrosis. Its malar surface was represented by two sequestra, which being removed exposed the deciduous molars, which were themselves eroded. There was also destruction of the orbital plate except the dense ring at the lower margin of the orbit, and the facial surface was necrosed up to the junction of the pre-maxillary bone.—Mr. W. G. SPENCER referred to a case of empyema in an infant which he had seen to occur secondary to noma.

Mr. PERCY FURNIVALL showed casts and specimens from a case of Acromegaly. The subject of the communication was a man, fifty-eight years of age, whose symptoms dated from 1893, although a photograph taken in 1875 showed that his jaw was unusually massive. In October, 1894, he presented all the features of a well-marked case of acromegaly. He was killed by a railway engine in December, 1894. At the necropsy the skull was uniformly thickened and heavy, and all the air spaces were dilated. The sella turcica was deep and wide, and the pituitary body was converted into a cyst containing semi-fluid substance. The lower jaw was large and massive, the rami being almost in a line with the body. The thyroid gland was slightly enlarged and altered in structure. No trace of the thymus gland was discovered. The sympathetic ganglia were normal. Except for some interstitial fibrosis of the kidney the other viscera were normal. The clavicle, rib, vertebræ, iliac crest, and bones of the forearm, hand, leg, and foot were exhibited and showed changes like those caused by chronic periosteal irritation. A deposit of new bone had taken place at the margins of the articulations and at the points of attachment of muscles and ligaments, but the joints themselves were not affected. Mr Furnivall gave an analysis of 34 recorded necropsies on cases of acromegaly, and said that changes in the pituitary gland had been found in all, and that in all but three there had been either hypertrophy or tumour. The thyroid gland was examined in 24 cases and was normal in only five, and was hypertrophied in more than half. The thymus gland was examined in 17 cases; it was absent in seven, hypertrophied in three, and persistent in seven. The sympathetic ganglia were examined in ten cases and were reported as hypertrophied in six of the cases. General enlargement of the brain and of the spinal cord had been noticed, and in four cases there had been degeneration in the posterior columns of the spinal cord. The only constant associated changes appeared to be those in the pituitary body, but it would be noted that these changes were not uniform and might occur without acromegaly.—Dr. ROLLESTON showed the Pituitary Body and Sections of the Thymus Gland from a case of Acute Acromegaly due to Sarcoma of the Pituitary Body. The patient was a woman, aged thirty-five years, who had shown symptoms of acromegaly for three years. She suffered from optic atrophy due to the pressure of the tumour, headache, which was intense at times, and transient glycosuria. The skeletal changes were quite characteristic. The patient had been twice in St. George's Hospital and an account of her clinical case had been published in THE LANCET[1] She died after an epileptiform fit on Aug. 16th, 1897, and Dr. Rolleston performed the post-mortem examination, together with Dr. Hollis, of Wellingborough, under whose care she was. The pituitary tumour was a round-celled sarcoma the size of a walnut and had invaded the right optic thalamus and the cavernous sinus. The thyroid gland appeared normal. The thymus gland was persistent and was much in the condition of that of a child before the changes of involution had set in. Dr. Rolleston considered that the case belonged to the group of acute acromegaly, of which Sternberg in a collection of 125 cases with 47 necropsies had found six examples all due to true sarcoma. The duration in these cases was from three to four years.—Mr. PELHAM LAWRENCE showed the pituitary body from a case of Acromegaly which had been under the care of Mr. Godlee. The gland was of about the size of a cherry and showed slight degeneration of the anterior lobe. Microscopically the change was found to consist chiefly in a swelling of the cells, which were definitely swollen, although preserving their normal arrangement.—Dr. NORMAN DALTON described the microscopic appearances of the organs in a case which he had brought before the society in the previous session. It would be remembered that the patient died with some symptoms of myxœdema and with glycosuria as well as symptoms of acromegaly. There was enlargement of all the viscera. Microscopically the central nervous system was normal. The intestine showed some catarrhal changes to the naked eye, and microscopically the sub-epithelial tissue was thickened as in myxœdema. The spleen and pancreas were normal, but there was some fibrosis of the kidneys. The liver capillaries were full, a few of the cells were fatty, and many were enlarged, showing specially large nuclei. The thymus and thyroid were quite normal, except that the thyroid juice appeared to be unusually fluid. The skin presented marked changes, the epidermis being thinned with hypertrophy of the papillæ and of the cutis vera generally. The papillæ contained irregular clumps of pigment, which appeared to be both in the connective tissue and in the vessels. Dr. Gordon Brown had shown a case of acromegaly to the Hunterian Society in which there was definite molluscum fibrosum over the chest. The pituitary body in Dr. Dalton's case was considerably altered, the posterior lobe having almost completely disappeared. It was much softened. The solid parts showed abundant irregular cells, often with two nuclei, but very little stroma. Up to the present he had not been able to decide whether it was a case of sarcoma or of hypertrophy of the pituitary body.—Dr. E. J. SMYTH showed specimens from a case of Acromegaly in which at the necropsy a large tumour of the pituitary body was found. Symptoms of acromegaly had been present for eighteen years before death, which occurred suddenly from an acute attack of vomiting and diarrhœa which did not yield to treatment. All the usual skeletal changes were present. A large oblong tumour, three inches by two and a half inches, was found springing from the pituitary fossa. It pressed upwards and stretched both optic tracts, and also separated the anterior clinoid processes. The thyroid gland was enlarged, weighing six and a half ounces, the right lobe being more enlarged than the left. Both the liver and spleen showed general enlargement.—Mr. CECIL BEADLES showed a specimen from a case which he had published in the *Journal of Pathology* for 1893 in which there was great dilatation of the frontal sinuses.—The PRESIDENT said that there must be many cases in which this condition occurred in a commencing or a partial form, as well as borderland cases which would be very difficult to differentiate from osteitis deformans. As an example of an early case he mentioned the case of a young, robust woman who was sent up to him. The only changes that he could discover were an enlargement of the terminal phalanges and an alteration of the nails which were becoming at the same time broader and shorter, with a tendency to crack longitudinally.—Mr. BUTLIN said there was as yet no knowledge as to the exact relation between the enlargements of the pituitary body, which appeared to be a constant feature, and acromegaly, since in so many cases of similar enlargement of the body symptoms of acromegaly were absent. He thought that light would be thrown on these cases by the careful study of cases of acute acromegaly such as that described by Dr. Rolleston, and he also thought that most

[1] THE LANCET, April 25th, 1896.

careful investigation should be made for any change whatever in the osseous system in every case of pituitary tumour. He had examined the bone in cases of osteitis deformans, and there could be no doubt that the changes were inflammatory. A good account of the minute changes in the bone in cases of acromegaly was much needed.

Mr. C. G. SELIGMANN showed the living ova of Bilharzia Hæmatobium from the urine of a soldier who had recently returned from Mashonaland. The ova were constantly passed from both the bladder and the rectum. Those from the bladder had terminal spines only, while those from the rectum had also lateral spines. The ova could be hatched in warm urine, although not so quickly as in water at the same temperature. In some cases the anterior end of the ovum began to move vigorously, and a number of granules were discharged, many of them collecting between the ovum and the shell. After a time the embryo would become slowly extruded. In other cases the embryo, after more or less active movements within the shell, escapes suddenly through a lateral rent. After escape the cilia at the oral end come to move more vigorously than those elsewhere. The shape of the embryo is constantly changing in an amœba-like manner.

Dr. CALVERT and Mr. T. STRANGEWAYS PIGG showed a specimen of Calcification of the Pericardium the result of chronic pyo-pericardium. The condition appeared to have existed for five years. Three weeks before death the patient was attacked with pleurisy with effusion and died from cardiac failure. The heart was found to be almost entirely cased in calcareous material and there were several ounces of inspissated pus in the pericardium. Such cases were very rare, but had been described by Murchison, Pearce Gould, Laennec, and others.—Dr. A. F. VOELCKER said that there was a similar condition figured by Matthew Baillie in his "Atlas," published in 1803, as one of "ossification of the heart."—The PRESIDENT said that this specimen confirmed his impression that calcification of the pericardium was almost always due to previous suppuration.

Mr. SPENCER showed microscopic specimens of a Submaxillary Salivary Gland altered by general inflammation, the smaller ducts of which were distended by small calculi formed of inspissated mucus in which carbonates were being deposited. The gland had been excised from a girl aged twenty years who had had recurrent distention of Wharton's duct and inflammation of the gland. On opening the duct copy mucus and numerous small calculi of the size and shape of rice grains escaped. Similar calculi continued to be discharged or were scraped away until finally the gland had to be excised to avoid suppuration. Mr. Spencer mentioned the case of a young man under the care of Dr. Dundas Grant, from whose duct calculi were being discharged of the same size and shape. In the ordinary way a single almond-shaped calculus forms in and fills the main duct. Here numerous calculi arose in the substance of the gland comparable to the formation of calculi in the liver or kidney.

Mr. SPENCER also showed microscopic specimens of Chronic Traumatic Neuritis taken from an amputated leg. The patient, a woman, aged forty-three years, had sprained her ankle severely four and a half years before. She had been under the care of Dr. Ferris, Mr. Davidson, and Mr. Francis, of Uxbridge, and had been several times in hospital under the care of Mr. Spencer. After the accident she could never put her foot to the ground, although all the bruising and swelling cleared up and there had been no fracture or dislocation. She always complained of great hyperæsthesia, of pain especially at night, and suffered intermittently from œdema. After four years ulceration and necrosis of the toes commenced, and the pain spread up to the external popliteal nerve as it turned round the fibula. After the accident the patient developed many general symptoms of a nervous character, and this taken in connexion with the approaching climacteric tended to support a diagnosis of hysteria until this was negatived by the commencing ulceration and necrosis of the toes. Pathologically the case was an interesting one of chronic spreading traumatic neuritis set up by a subcutaneous injury to the soft parts without the intervention of any of the other recognised causes of peripheral neuritis.—Dr. F. E. BATTEN asked if any other stains than the ordinary hæmatoxylin had been employed, and whether during life there had been any reaction of degeneration in the affected limb.—Mr. SPENCER, in reply, said that several stains had been used and showed the same changes. The electrical reactions had not been tested, partly owing to the extreme hyperæsthesia.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.

Exhibition of Cases.

AN ordinary meeting of this society was held at 20, Hanover-square on Oct. 27th, Mr. BUXTON SHILLITOE being in the chair.

Mr. W. T. FREEMAN showed a patient, a middle-aged single woman, who had two patches upon her forehead; the edges were slightly raised and were encroaching very slowly indeed upon the surrounding skin. The centre of each patch was occupied by a quite superficial atrophic scar. Neither patch had ever wept, and there was practically no irritability. One patch had existed for sixteen years and the other for twelve years. Mr. Freeman asked for a diagnosis, and the opinions given were various.—An early form of rodent ulcer was suggested by Mr. PERNET.—A specific origin was also suggested, or that the patches were simple lichenous patches.

Dr. ABRAHAM showed in a man about forty-five years of age an interesting example of Xanthoma Diabeticorum. The individual lesions were of about the size of hemp seeds.—Dr. ABRAHAM also brought forward in a man above middle age a case of Granuloma Fungoides. There were well-marked new growths over the lower abdomen and close by the left nipple. The case was originally believed to be one of seborrhœic eczema.—Dr. STOWERS agreed as to the diagnosis and remarked that they seldom had the opportunity of seeing the disease in such an early stage.—Mr. PERNET remarked on the longevity of the ancestors of such patients and gave examples.

Dr. SAVILL showed a case of Urticaria Factitia and also one of Drug Eruption. The urticarial wheals, both those that were persistent and those that could be mechanically produced at the time, were very exaggerated. The drug eruption was marked and not limited to the acne regions.

Mr. SHILLITOE showed a case of Acute General Dermatitis caused by a mercurial ointment.

Mr. HOPE GRANT showed a case of Tumour of the Hand. It commenced a few months previously as a boil; the tumour had steadily increased in size and a scab had formed. It was evidently a tuberculous growth, probably of the nature of a post-mortem wart. The patient was a clothworker.

Dr. ABRAHAM showed for Mr. WAREN TAY a case of Lichen Ruber Acuminatus.—Mr. PERNET called it lichen planus.

Dr. STOWERS brought forward a woman, aged twenty-four years, for diagnosis. He believed it to be a case of Acne Varioloformis.—This was generally agreed to.

Dr. EDDOWES showed a case of Seborrhœa Corporis in a man aged forty-five years. He remarked on the fact of its having commenced on the scalp and then having spread downwards.—Dr. EDDOWES also showed a case of Lichen Planus Hypertrophicus on the legs in an old man.—Dr. EDDOWES also demonstrated by paper, photographs, and microscope a case of Tinea Circinata contracted from a pet hedgehog.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Exhibition of Specimens.—"Home made" Artificial Denture.—Extraction of a Tooth by Means of an Elastic Band.—A Mandible showing an Embedded Premolar.—Acute Suppuration of the Mandible.—Presidential Address.

THE opening meeting of the session of this society was held on Nov. 1st at 40, Leicester-square, Mr. W. E. HARDING, President, being in the chair.

Mr. H. L. ALBERT exhibited two Deciduous Central Incisors which had been removed from the mouth of a child twelve months of age. The teeth presented an extreme development of the cingulum on the palatal side, and as this led to irritation of the tongue the teeth were removed.

Mr. STORER BENNETT showed for Mr CHARTERS WHITE a specimen of "Home Made" Artificial Teeth. The two central mandibular incisors had been lost and the patient had carved up somewhat primitively two pieces of bone and had fixed them in position by wire ligatures around the adjacent lateral incisors. The specimen shown included the two artificial teeth with the two natural teeth.

Mr. G. BRUNTON showed several Instruments of his own design and also recorded a case of Extraction of a Difficult Misplaced Maxillary Bicuspid by means of Elastic Ligatures.

Mr. W. A. MAGGS exhibited a Portion of a Human Mandible showing a first bicuspid embedded in the substance of the bone. The tooth was placed in a horizontal position, the apex being towards the median line the crown being situated just above the mental foramen.

Mr. ROUGHTON read the notes of a case of Acute Suppuration of the Mandible, which was followed by pyæmia and death. The patient was a boy, seven and a half years of age, and on Oct. 1st he sat in a draught at school. The same night he complained of pain in the left side of the face, and on being seen the following day by a medical man was found to have a temperature of 105° F., the gum over the region of the left molar being so swollen and painful that the mouth could not be opened. This condition showed little change for two days, but on the third day rigors occurred, and the following day—namely, Oct. 6th—the swelling had extended into the infra-mandibular region. The patient was also slightly delirious. The next day the swelling having extended further down an anæsthetic was administered and an incision made into the tissues of the neck. No pus was evacuated, but the tissues appeared as if about to slough. The teeth were apparently healthy, but the first permanent molar was quite loose and had pus welling up around it. The tooth was removed and the pus evacuated and the parts rendered as aseptic as possible. The next day signs of peritonitis appeared, the patient dying on the following day. Mr. Roughton considered the case to be one of acute panosteitis. A somewhat similar case was recorded by Mr. Goadby.

The PRESIDENT then delivered his Inaugural Address. He referred to the early history of the society, and remarked that one of the most noticeable features of the period which had lapsed since the foundation was the knowledge which had been obtained of the micro-organisms. After paying a tribute of praise to M. Pasteur and Lord Lister he touched upon the advances made in the knowledge of the micro-organisms of the mouth and their action by Mr. Underwood, Mr. Mills, Mr. Tomes, Mr. Mummery, Mr. Miller, and Dr. Black. He pointed out how our knowledge of the pathology of caries had been advanced by the work of these investigators, and also showed how the adoption of Listerian principles in dental surgery had revolutionised the treatment of septic roots.

At the conclusion of the President's address the meeting adjourned.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

THE annual general meeting of this society was held on Oct. 23rd, Dr. SEATON, President, in the chair.

The PRESIDENT, after a graceful reference to the recent death and services of Dr. F. W. Barry, delivered his presidential address, taking for his subject the Work of the Medical Societies in its Relation to Public Health. Much of the work of the Pathological, Medical, and Clinical Societies and the unremunerated researches of individuals, whether undertaken in a purely scientific spirit or with an immediate utilitarian motive, had contributed greatly to the promotion of the ends which their society more directly or exclusively had in view. But the Epidemiological Society, which occupied a position intermediate between the strictly medical societies and their own, was above all others engaged, as its objects stated in the charter of incorporation showed, in pursuits identical with theirs. Then there were the British Institute of Preventive Medicine, the Sanitary Institute, the Institute of Public Health, the Jennerian Society, and the British Medical Association, which, though primarily a union of medical men, had a public health section at its annual congresses. The Sanitary Institute and one or two others embraced men of all professions more or less interested in public health, and there was no doubt that much advantage accrued from association with architects, engineers, chemists, geologists, &c., as well as from the museums and exhibitions promoted by some of these societies. Their various transactions and journals were of great value, yet members of their own society who belonged also to the Epidemiological Society and the Sanitary Institute could not but feel that the multiplication of associations involved a loss of the power resulting from union and that, as Sir Douglas Galton had said, "the interest of public health and sanitation were frittered away over too many societies." He would therefore earnestly urge every member of the Society of Medical Officers of Health to do his best to bring about an amalgamation of all those engaged in promoting the same cause, believing that, since the medical element would always be the predominant one, the authority and influence on public opinion of one great society would be far greater than that which they could exercise with their present divisions; and he thought that this year, being the fiftieth anniversary of the appointment of the first medical officer of health, Dr. Duncan, at Liverpool and the inauguration of the public health service, would be a fitting occasion for effecting such a union. He next referred to a number of questions that had long engaged the attention of all really interested in public health, such as the tenure of office, the qualifications of medical officers of health, the severance of public work from private practice, and the relation of sanitary inspectors to the medical officers of health in town and country districts, their qualifications, and the constitution of the court of examiners. In this connexion he could not pass over the able services rendered to the cause of medical officers and public health administration by Dr. Orme Dudfield. The Maidstone epidemic had shown how different was the sanitary examination of water-supplies from the merely chemical question of the analysis of adulterated foods and, also, how important was a knowledge of the normal condition of a given water and of the contingent dangers to which it was exposed apart from actual contamination. Chemical analysis, without bacteriological examination and the other considerations to which he had alluded, might tend to a false sense of security, but taken in conjunction with these it should serve as a delicate barometer and an indication of impending danger. But while such catastrophes aroused public attention owing to their suddenness it ought to be known that there was in some districts a constant prevalence of typhoid fever attributable to other causes than the pollution of a certain public water-supply, and the record and publication of the distribution of any local excessive incidence of this and of other preventable diseases, as was done by the Surrey County Council, by stimulating preventive action contributed in an important degree to the averting of such outbreaks and to the saving of life without the supervention of these terrible lessons. Such a society as he had indicated should include all the leading epidemiologists who, without belonging to the public service, had made the subject of communicable diseases their special study, and its inauguration would, he repeated, be a fitting and worthy commemoration of the jubilee of the institution of medical officers of health.

Reviews and Notices of Books.

The Year-book of Treatment for 1897. London: Cassell and Co., Ltd.

THIS admirable publication fully keeps up the high standard of merit and usefulness which has been maintained in the past. The present is the thirteenth year in which it has appeared. A large part of Dr. Coupland's article on Diseases of the Heart and Circulation is devoted to an able account of the Nauheim treatment, in which all sides of the question are usefully discussed. Dr. Schorstein, who is a new contributor to the work, deals very thoroughly with Recent Advances in the Treatment of Pulmonary Disease; while another fresh contributor, Dr. Francis Boyd, treats of Kidney Diseases and Diabetes. In the section on Infectious Fevers Dr. Sidney Phillips has much of value to say on the Antitoxin Treatment of Diphtheria, and on the Serum Test in Typhoid Fever. Mr. Rose and Mr. Carless treat of the Advances in General Surgery. The subject of Deciduoma Malignum is very fully discussed both in the article on Diseases of Women by Dr. Herman and in that on Midwifery by Dr. Handfield-Jones, and in the latter article the use of anti-streptococcic serum in puerperal septicæmia receives full

consideration. Dr. Willoughby deals with Public Health and Hygiene in a series of short but very valuable criticisms, and Dr. Nestor Tirard with the subject of Therapeutics. We have commented on but a few of the excellent articles; most of the contributors are the same as in previous years. We can most heartily commend the annual to every practitioner as an indispensable means of keeping his knowledge of treatment up to date.

Atlas and Essentials of Bacteriology. By Professor K. B. LEHMANN, of Würzburg, and Dr. RUDOLF NEUMANN, of Würzburg. London: Baillière, Tindall, and Cox. 1897. Price 12*s.* 6*d.*

THE larger portion of this little book consists of sixty-three chromo-lithographic plates illustrating the cultural and morphological characters of the principal pathogenic micro-organisms and of a considerable number of the commoner non-pathogenic ones. In so far as it is possible to give any idea of these by chromo-lithography the attempt is creditable enough. In many cases the illustrations give an excellent representation of the cultural characters, especially in instances where the growth is opaque—e.g., staphylococcus albus, bacillus mesentericus vulgatus, &c. Where, however, the growth is of a semi-transparent or fluorescent nature the results are as a rule poor and of little value, for it is absolutely impossible to represent in opaque tints the appearances of a culture of the pneumococcus or the typhoid bacillus. The illustrations are thus of very unequal value. In many cases the appearances of individual colonies as seen under a low power of the microscope are successfully rendered, and the figures of stained micro-organisms are sometimes good. The utility of such an atlas is probably not very great. It is true that occasionally it may give a clue to correct determination, but the absence of any description of the organisms depicted renders verification impossible. For teaching purposes it may serve a good end, where actual specimens and cultivations are not available. The second and smaller part of the book, on the "essentials" of bacteriology is, in our opinion, of far greater value, and many of the chapters will be read with pleasure and interest by those who wish to acquire some knowledge of bacterial chemistry and have no leisure to peruse the larger works on the subject. The morphology and classification of bacteria and the vital conditions necessary to their growth are well summarised. An account of their effects follows, in which the chemical results of bacterial metabolism are considered at some length, especially in relation to the presence or absence of sugar in the nutrient medium. A short appendix deals, in conclusion, with the preparation of staining fluids, cultural media, and other matters of technique. The chemical part of the work appears to us to have considerable value and is well worthy of attentive study.

LIBRARY TABLE.

Under the Red Crescent: Adventures of an English Surgeon with the Turkish Army at Plevna and Erzeroum, 1877-1878. Related by CHARLES S. RYAN, M.B., C.M. Edin., in association with his friend, JOHN SANDES, B.A. Oxon. London: John Murray. 1897. Price 9*s.*—The title of this delightful book should have been "Phil Fogarty II.," for the adventures which the author relates are even superior to the experiences of the Thackeray-Lever hero. Dr. Ryan is an Australian-Irishman and evidently possesses qualities eminently suitable for an army surgeon: indomitable pluck, cheerfulness under the most depressing conditions, and, above all, the quality of sympathy. This latter gift is apparent in his book, so that the reader feels as if he knew the writer intimately by the time he has got to the end of it. Dr. Ryan finished his medical education at Edinburgh University and was enjoying a holiday when he saw an advertisement from the Turkish Government inviting applications to serve as an army surgeon. He at once applied and was accepted, and the first post to which he was appointed was the camp outside Widdin. Of his work here he gives the following picture, the background of which is like an extract from Theocritus:

> τάχα δὲ κράναν ἐνόησεν
> ἠμένῳ ἐν χώρῳ· περὶ δὲ θρύα πολλὰ πεφύκη,
> κυάνεόν τε χελιδόνιον, χλοερόν τ' ἀδίαντον,
> καὶ θάλλοντα σέλινα, καὶ εἱλιτενὴς ἄγρωστις.

"Half a mile from the camp was a large marsh or swamp, where great white arum lilies grew, with jonquils, narcissus, and the different kinds of iris in magnificent profusion, as well as millions of the tiny white snowflakes. I had a trench dug outside my tent, and once a week our two servants ..... brought back barrowfuls of flowers, which I planted in the trench. Here, too, the orderlies made us a great seat of turf, and every morning, from six o'clock till half-past nine, I sat there among the flowers to receive my patients, who used to come up from the various battalions to have their ailments treated. ..... As I sat on my throne of turf I had a sackful of Epsom salts beside me, together with a bucket of water and a pannikin, so that when the patient had swallowed a handful of the salts I presented him with a pannikin of water and he washed the nauseous mouthful down." Dr. Ryan was soon, however, to see very different work. His account of the Siege of Plevna and of the appalling state into which the hospital got towards the end of that magnificently borne time of trial reads like a chapter from the "Inferno." We must not quote any more, but will only say that after getting out of Plevna Dr. Ryan volunteered for service with the Stafford House ambulance for service in Erzeroum. Here things were, if possible, worse than in Plevna. Typhus fever, cold, and starvation added to the misery of wounds made up a terrible tale. We can sympathise with Dr. Ryan's trials on his journey from Erzeroum to Trebizond, for from a personal experience of the country we know what he must have undergone. Everyone should read this book; it is a plain unvarnished tale of what goes on in war, and takes us back to the simplicity of MM. Erckmann-Chatrian, whose war stories are, we think, superior to those of Zola, except perhaps his "Attaque du Moulin." The style is easy and eminently readable; how much of this is due to Mr. Sandes of course we cannot say, but we are sincerely grateful to both the authors.

The Benin Massacre. By Captain ALAN BOISRAGON, one of the two survivors. London: Methuen and Co. 1897. Price 3*s.* 6*d.*—The author graphically describes the terrible massacre in Benin in the beginning of the present year, the news of which startled the civilised world alike by the act of base treachery of the King of Benin by which it was accomplished, and which was described by the surrounding tribes as a "monkey palaver," not a "man palaver"—meaning to show their contempt that a man could be guilty of such treachery—and by the revolting sight of the human sacrifices and "temples" reeking with human blood which the punitive force that later took the shambles (otherwise the city) found in large numbers in all directions. As one of the only two survivors who escaped the massacre—whose sufferings in their retreat to Gwatto Creek, each with innumerable wounds and their flesh covered with thorns picked up in fighting their way through the bush, must indeed have been horrible—Captain Boisragon is eminently qualified to tell the tale of the incidents, which he does admirably. He also appends a description of the surrounding country and of the events which led up to the outbreak. As a letter of a comrade of one of the victims well puts it, "The loss which the British nation has sustained during the last sixty years through the deaths of so many brave soldiers,

bluejackets, and civilians in the glorious work of rescuing the native races in West Africa from the horrors of human sacrifice, cannibalism, and the tortures of fetish worship, must ever be a matter of deep regret and sadness to all, but it cannot fail to make us proud of our countrymen who have nobly and courageously done their duty with the greatest enthusiasm, undergoing hardship and privation inseparable from the trying climate of the West African coast, and exhibiting in their conduct an entire disregard of personal danger."

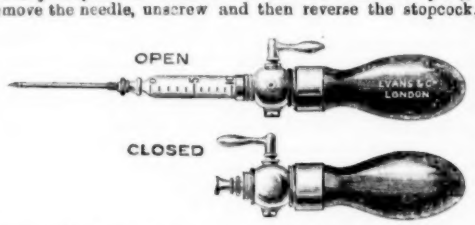
A new edition of *The Guide to South Africa*, for the use of tourists, sportsmen, invalids, and settlers, has been issued by the Castle Mail Packets Company, and the large amount of information which it contains within the covers of its 400 odd pages and its many maps cannot fail to render it an admirable handbook to those whom it concerns.

The weekly board of the Sheffield Royal Infirmary have issued an interesting souvenir volume to commemorate the hundredth anniversary of the opening of that institution. The historical sketch with which the book opens tells the story of its foundation and development, and the recollections of the medical staff as constituted in more recent years are recounted by Mr. Simeon Snell, F.R.C.S. Edin. A short chapter is devoted to recording the growth of the medical work of the infirmary during the century and another chapter to the biographical notes of the physicians and surgeons who have laboured within its walls. A chronology of events and lists of the various officers, with the dates of their appointments, are also given, together with much other information which will doubtless be of interest to those connected with the institution. The volume is embellished with many illustrations by the autotype and other processes, and is handsomely printed with red borders to each page, and has an appropriate inscription, with Scriptural texts, on the front cover. The many interested in the Sheffield Royal Infirmary will doubtless prize this interesting souvenir of the century's work of their institution.

New Inventions.

A MODIFIED PISTONLESS HYPODERMIC SYRINGE.

THIS syringe is a modification of Koch's, which is too bulky for general use. The illustration shows the arrangement, which makes a very compact and convenient little instrument. It is easily carried in the waistcoat pocket, as it does not take up more room than the ordinary pattern. The stopcock is furnished on both sides with a thread, which screws into a ring, upon which is mounted a cylindrically-shaped elastic air-chamber. To close the syringe remove the needle, unscrew and then reverse the stopcock,



passing the barrel into the cavity of the air-chamber, and screw up. The needle can be inserted into the barrel through the stopcock, being kept in place by a thread screwing into it. This stopcock has a double action, so that when turned to cut off the connexion between the barrel and the air-chamber the latter communicates directly with the outside air. This syringe is very easily rendered aseptic; the piston of the usual pattern is the cause of an immense amount of trouble and frequent delay, while the difficulty of thoroughly cleaning the leather usually fitted is obvious.

The ease with which an injection can be administered with this little instrument is remarkable. It can be prepared for use in a few seconds, and being so simple it cannot get out of order. Absolutely no force is required as there is no piston to jam. If care is taken to turn the stopcock as soon as the upper surface of the solution is seen to reach the point of the barrel marked 0, no air can be injected into the tissues. The fact that this can occur is the only objection to a pistonless syringe, while the advantages are many and quite outweigh this solitary disadvantage which, after all, can only occur as the result of carelessness. The makers are Messrs. Evans and Wormull 31, Stamford-street, S.E.

J. W COCKERILL.
Surgeon-Captain, Army Medical Staff.

THE INDIAN FRONTIER RISING.

THE news from India regarding the campaign against the frontier tribes has now assumed a much better aspect, and there is every reason to hope that the punitive expedition is within comparatively easy reach of a successful termination, although a harassing guerilla warfare may still be expected to follow. The Sampagha and Arhanga Passes have been captured with relatively little loss of life; the passes having been forced the gateway to the Afridi country has been opened, and the "purdah" which has hitherto hidden the comparatively open, picturesque, and fertile country of the Afridi Tirah from view has been raised. The Mullah, Said Akbar, has apparently fled to Jellalabad, and the tribes, disheartened by their want of success, are seemingly now convinced of our power to put down the rising, and as a consequence the revolt is fast waning and the tribes have appealed to the Ameer of Afghanistan to intercede with the Indian Government on their behalf. The Ameer, who has expressed no sympathy with their hostile conduct, appears to have given them some sound and salutary advice and has written to the Viceroy of India expressing his loyalty and proffering all the help in his power. Such is, shortly, the situation at the present time. The home of the Afridis seems by all accounts to be fine agricultural well-to-do country, with plentiful supplies of all kinds, in fact, "a land flowing with milk and honey," and our troops are reported to be in excellent health and spirits. The recalcitrant tribesmen proceeding in the Khyber direction will soon find that they can offer no real resistance to the column advancing from Peshawar. The difficulties of the route have been very great, and the expedition has involved much hardship; the days are still hot, but the nights are very cold. The campaign has been, strategically speaking, well designed and brilliantly executed. We can only trust that Sir William Lockhart will succeed in disarming the Afridis and other opposing tribes and securing a fairly permanent peace. The wounded are doing well, and from all we can learn the hospital arrangements have been good. In the interesting account published in the *Standard* of the 3rd inst. of its correspondent with the Malakand field force, a graphic description is given of the night engagement of General Jeffreys' brigade with the tribesmen. Mention is made of an act of great gallantry on the part of Surgeon-Captain Fisher, I.M.S., who was sent with two dhoolies to the assistance of Captain Ryder's company. He escorted them through the village of Badalai and on to the hill under a hot fire from the enemy. The total losses sustained in the campaign against the border tribes since June to Oct. 28th have been large for frontier warfare. The casualties amount to 247 killed and 843 wounded. This includes 24 British officers killed and 52 wounded. The number of British soldiers killed is 34 and of wounded 151. Among the native ranks 177 have been killed and 595 wounded. These numbers do not include, however, the losses at the Sampagha Pass and the Arhanga Pass or those which have taken place since.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 6, 1897.

THOSE who judge the outlook of the profession of medicine from the side of medical politics may be tempted to take a somewhat gloomy view of the immediate future. The ever multiplying demands of medical education and the ever-increasing torture and uncertainty of the examination processes through which the different medical and surgical qualifications are acquired make the work of the student anxious and exacting beyond all precedent. To practitioners the prospect is little more reassuring. Great judges tell us that the profession has a great future; and certainly their prognosis should be realised. For the scientific basis of all true medical service is being strengthened every day and at every point, and with this the value of medical service should be daily more and more appreciated. Yet experience witnesses almost a daily deterioration in the popular estimate of medical service. To get it charitably or to get it on altogether inadequate terms is the effort of large classes of the community who are not unreasonable in their estimate of other things which they need and for which they are prepared to pay the market price.

It is devoutly to be hoped that this is a temporary state of matters, and that the growth of education amongst us will make the public more intelligent as to the value of true medical service as distinguished from all quack varieties of the same. But how rare is the education that enables men to truly estimate the science and art of medicine. It is notorious that the most cultivated classes have always shown a weakness towards quackery, and the same weakness is not unknown in the more gifted men. No doubt the defects and limitations of medical knowledge have given some excuse in the past for this attitude of mind towards legitimate medicine. But it is daily becoming more and more unreasonable. Of course, medicine still has its limitations. There are whole classes of disease before which we stand very humbly. We are not able to cure them. We can only in a very limited sense control them. Some of them are as yet undefined or unintelligible to the highest medical intelligence. But two considerations are to be urged here. First, that even with regard to those classes of disease medicine and surgery are able occasionally to do wonders in the way of relief of suffering and the prolongation of life, and that with regard to the great mass of human ailment and disease the powers of the medical practitioner are very important and daily becoming more and more so. This much is clear, that on whatever scale the unknown and difficult in matters of disease are in the eyes of the medical man they must loom much larger to him who has not studied medicine or to him who has only studied the arts of deceiving the public with unrealisable pretensions. If the medical man is puzzled by disease and occasionally led into error, how much more must the amateur dabbler in healing go astray.

There are two or three great things for the profession to do to advance its prestige in our ever-advancing civilisation. The first is to complete its own equipment for the contest with disease. The public now are more enamoured of that conception of a medical man which contemplates the warding off or prevention of disease than that which merely removes it. The Chinese idea that medical service consists in preserving health rather than in restoring it has a certain basis of reason in it, and that practitioner will in the long run be most successful who sees in every temporary ailment of his patient the opportunity for advising him against its recurrence as well as the means to strengthen his powers of resistance. Men will be less unwilling to consult their medical adviser if he takes a kindly and yet a scientific interest in the causes which have led to their need of him with a view to such causes being successfully opposed in the future. In other words, the future of the profession is to be advanced by the deepest study of the problems of ailment and disease in all the complicated social conditions in which they arise.

There are, of course, some social or political remedies for the evils which at present depress medical men and destroy medical practice. It is impossible to deny that the profession itself is to blame. It makes itself too cheap. In hospitals it gives itself away too easily to those who could well afford to pay and who would appreciate medicine more if it cost them a reasonable sum per annum as even their beef and their bread—not to say their beer—do. This wholesale treatment of disease in crowds at hospitals has a very injurious effect on medical practice. It compels a reduction in fees which are already inconsistent with justice to the patient or the practitioner. We heard lately of a provincial town in which there was a large outbreak of diphtheria. To the inquiry whether antitoxin was used the ready reply was, "Oh, no, it is out of the question. It could not be paid for."

Even in London, at the very door of the British Institute of Preventive Medicine, the prompt procurement and application of this important medicine are matters which require some ardour and conviction in the practitioner, and if his patient is poor an entire abeyance of the idea of recompense. The recompense of medical service is being so fatally lowered by the competition of hospitals that medical men are discouraged most grievously in the use of the best means. The remedies are largely with the profession itself. The general practitioners of the country have a right to look to their natural leaders, the consultants, for protection from the unfair competition of hospitals, as they have a right to look to all their fellow practitioners in general practice to give no countenance to schemes for sweating medical men and attending the sick in crowds where neither reverence for patients nor attention to their diseases is possible. Another remedy for the low estimate of medical practice is to be looked for in a higher estimate of their disciplinary functions on the part of the qualifying bodies, whether corporations or universities. The medical authorities must often have qualms of conscience when they compare the loose discipline of the medical profession with that of the legal, though life is more than property, and the profession which is meant to cherish and save it should be

under still more strict discipline than that of the law. We cannot doubt that these views will force themselves on all who are in any position of responsibility either in the medical bodies or in those great voluntary associations of the profession which have virtually the power to impose laws to regulate medical conduct. But the great security for the lasting dignity of the profession in the eye of the public will be in the determination of its individual members to make themselves familiar with every sound device for alleviating suffering and removing disease.

GREAT interest was evinced in the meeting held last week of the Hospitals Association, and the proceedings justified the interest taken, for rarely has a subject of greater interest been submitted for expert discussion, and not often has the discussion of a great problem yielded better promise of useful results. One thing that was made very manifest at the meeting was that there is very great need of the ventilation of questions such as those treated in the papers read by Sir SYDNEY WATERLOW and Mr. ACLAND. So unused are even the inner public, if we may be allowed the phrase, to the discussion of such questions that at one moment there seemed a danger that the meeting would dissolve without any discussion at all, contenting itself with the passing of a ceremonial vote of thanks. Sir HENRY BURDETT performed a real service by interposing at the critical moment with some effective criticism and setting an example which averted the threatened failure and turned the meeting into a success. But the success of the meeting lay chiefly in its demonstrating that there is much good to come out of such conferences, and we hope that it will be followed up by many more at which people who are interested in hospital work will learn to speak without constraint and to offer and receive criticism in a spirit of unconscious goodwill. The meeting on last Thursday week preserved perfect good humour, but there was manifestly a suspicion abroad that anything like trenchant criticism would probably be resented. We do not for a moment suggest that anybody was to blame for this. On the contrary, we are satisfied that it was nobody's fault and due only to the circumstance that there being no tradition of outspokenness to warrant any unusual frankness in that gathering, every speaker in his turn felt naturally, and indeed quite properly, unwilling to verge towards anything that might be considered to be personality. This feeling speedily disappears among people who are accustomed to meet for the purposes of discussion, and if the gathering that assembled in the board-room at Charing-cross Hospital under Mr. BONSOR'S presidency could be induced to resume the discussion at the point at which it broke off last week we are convinced that valuable results would follow further conference.

The question which mainly occupied the meeting—namely, the relative merits of the Hospital Sunday and the Hospital Saturday schemes of distribution—is a question of great importance, and it was, perhaps, natural that the meeting should feel a preference for the Hospital Sunday Fund scheme. It has, indeed, much to recommend it. It has been elaborated by a committee that had nothing other to consider than the efficiency of hospital administration as an instrument for bringing charity to bear for the relief of the medical necessities of the poor. The Hospital Saturday Fund Committee has had a somewhat more complicated problem to solve. Charity on one hand and necessity on the other have been the main features of their case. But they have not quite emancipated themselves from the idea that to a greater or less extent they ought to obtain a return for their money, and hence they have appropriated a proportion of their funds to the purchase of hospital letters to be at the disposal of the committee. Such a difference in the point of view necessarily involves a difference in the aspect which the problem of distribution presents and a difference also in the resulting practice. No one method should be proclaimed perfection, nor are we yet clear of the danger that in this, as in other matters,

> "..... one good custom should corrupt the world."

But there is another question of even greater moment which received very inadequate treatment at the Hospitals Association meeting—namely, the question of distributing the PRINCE OF WALES'S Hospital Fund. It seemed to be in some way taken for granted that when the question of Saturday or Sunday scheme had been settled the question of the principle upon which this Fund should be distributed would be settled also. That we take to be a very serious mistake. The PRINCE OF WALES'S Fund stands on a different footing and ought to be distributed upon a different principle. Indeed, the materials for discussion as to the methods of its distribution do not yet exist. There is some reason for apprehending that when the hospital accounts of the present year come to be made public it will be found that the PRINCE OF WALES'S Fund has caused some diminution of the subscriptions which ordinarily reach the hospitals direct, and if this surmise should unfortunately prove to be correct it will doubtless be found that the burden has fallen more heavily upon some institutions than upon others. In that case the first duty of those who may be charged with the distribution of the Fund will be to see that any deficiencies traceable to this cause be made good, and only in dealing with the surplus will they be free to entertain considerations of a more general character.

It will thus appear that there is much useful work to be accomplished by a continuance of the conference so auspiciously inaugurated in the board-room at Charing-cross Hospital, and we hope that its promoters will renew their invitation and meet with another equally good response.

CRIMINAL abortion where death of the woman ensues is an offence punishable by forfeiture of life. This is the statute law. In its moral aspect it is held in such general abhorrence that all who are found guilty of the crime—save the unfortunate victim, who is sinner and sacrifice at the same time—are rightly considered as being without the pale of sympathy or commiseration. We have on many occasions pointed out that when the perpetrator of the act is a qualified medical man the sin against GOD and his fellow creatures is the more penal, since he acts under the sordid motive of pecuniary gain. It has been argued, and with some force, that the person who illegally procures abortion has every reason to wish that the life of the woman may be spared

and that, therefore, the deed is not committed with malice aforethought, the prime legal distinction between murder and manslaughter. The majority of our judges lean to the side of mercy and direct juries to return verdicts of guilty of the "minor offence," and that, too, in the face of Lord BRAMWELL'S judgment, which has not been over-ruled. Whether we accept the more rigid reading of the Act of Parliament or the milder interpretation matters but little on the occasion of these comments. Little or nothing can be said in extenuation of the professional turpitude of a medical man who engages himself in such nefarious courses. On the other hand we deem it of paramount necessity that the charge should be supported by such corroborative evidence as to leave no reasonable doubt of guilt. When the accused is a qualified medical practitioner the danger of wrongful conviction is greater, inasmuch as the lawful exercise of his calling may be mistaken for criminal procedure.

At the Central Criminal Court on Oct. 30th Mr. WILLIAM ROBERT HALL HAINS, L.R.C.P. Irel., was put on his trial for conspiring with a married woman to procure abortion. We need not go into the details of the grounds on which the charge was based; suffice it to say that the incriminating evidence was supplied by a servant and a young daughter of the female prisoner. How utterly unworthy of credit their testimony was may be gauged by the fact that the jury, after the case for the prosecution had been put before them, expressed the opinion that it should not be carried further. Mr. Justice RIDLEY concurred, and the legal representative of the Public Prosecutor withdrew his support to the indictment. With this episode at the Old Bailey before them our readers may ask, Why did the magistrate commit the case for trial? We consider the action of the stipendiary as consistent with common-sense as it was justifiable at law. A charge so grave could not have been satisfactorily refuted in any other way than by appearance before a high tribunal. But we deeply sympathise with Mr. HAINS in his protracted suffering, for imagination with difficulty suggests the fearful mental anguish incidental to the occasion. To him it will not seem sufficient balm to his wounds that his friends can with fuller heart and surer mind offer him congratulations on his deliverance because of the unequivocal character of his acquittal. This case was a splendid exhibition of even-handed justice. A fellow creature had been arraigned on a charge of the greatest gravity, and judge, jury, and counsel with one voice proclaimed him innocent; for over and above the fact that the evidence was universally deemed insufficient to substantiate the allegations, Mr. HAINS was acquitted without being called upon for his defence, receiving immediately an unconditional release and an unmistakable certificate of an unstained character. But how will this compensate Mr. HAINS for the horrors of the past weeks? We repeat that he has our deepest sympathy. And his experience, also, is one that is incidental to our calling, and only rigorous punishment of false witnesses and blackmailers will prevent such cases from becoming more numerous.

UNIVERSITY OF CAMBRIDGE.—The number of medical students entered as freshmen during the present term is 131, or about 20 less than in the corresponding term of last year.

Annotations.

"Ne quid nimis."

"WHY SHOULD LONDON WAIT?"

THE following words will be read with deep interest by many of our readers:

"I have a great interest in university work. Though I have not myself studied at a university, and have no claims of that kind to put before you, yet, after all, I hope that if I live I may do something to create a university. I believe in the multiplication of these great teaching establishments. That is one of the results of the democracy to which you referred, and a very good result. I am not afraid of the multiplication of these institutions. I think that the experience of Scotland shows that they are not likely to compete in degrading or depreciating the character of the education which they give, and in the United Kingdom our system will not be complete until there is a University in the Midlands."

These words, greeted with applause, were spoken by the new Lord Rector of Glasgow University at a private gathering on Wednesday evening in the course of an interesting speech in acknowledgment of the toast of his health. We need hardly say that we wish Mr. Chamberlain success in his endeavours, but at the same time it is impossible to avoid contrasting the spirit and intention of these remarks with the somewhat lukewarm assistance hitherto rendered by the Government of which he is an influential member to the cause of a teaching university for London. Indeed, if we mistake not, the earlier efforts to obtain such an university were frustrated by the opposition of the provinces and, we think, by Mr. Chamberlain himself. Perhaps it is not too much to expect that the application of the formula of "simultaneity and similarity" may lead to the creation of a metropolitan as well as of a midland university, for it is inconceivable that the overwhelming claims of London to university organisation can be ignored whilst those of Birmingham are recognised. Unhappily for London it has no Mr. Chamberlain to champion its cause.

ILLEGIBLE PRESCRIPTIONS.

MR. LABOUCHERE says that until lately he has been under the impression that all medical prescriptions were written in recognised hieroglyphics and that although they might not be decipherable by the unlearned public they were nevertheless "thoroughly well understood in the trade.' This belief, we learn, has been quite upset by a lady who has told him that this illegibility of prescriptions is "merely due to the bad penmanship of the doctors." It seems that his fair informant has been making inquiries on the subject, and that "from one chemist she got the alarming answer, 'We can generally make out most of it, and *the rest we have to guess.*'" The terrible state of affairs thus so clearly established has had such a disquieting effect on Mr. Labouchere that it has led him, shrewd and practical man though he is, to make a ridiculous suggestion. "My lady friend thinks that the remedy is to be found in typewriters, and perhaps it might be as well if a short Act requiring all prescriptions to be typed were passed at an early date." The lady friend is, perhaps, a "typist" herself, or may be a loyal lady always on the alert to create employment for her own sex, so many of whom are "typists"; but there are no excuses of that sort to be urged for Mr. Labouchere's attitude, while light talk about proposed legislative enactment comes badly from a serious legislator. It is true that a typewriting machine could be carried in a brougham or dogcart, but many modern practitioners go their rounds on bicycles, to say nothing of the army of humble pedestrians, and the least ponderous typewriting

machine would be a cumbersome article to carry about by hand or affixed to the framework of a bicycle. Perhaps the fact had struck Mr. Labouchere even in writing, for we notice that in a subjacent paragraph of *Truth* he rather goes back on the proposal that all prescriptions should be type-written by seeing violent virtues in their illegibility. For such is the moral of his next story. Commencing with the reflection that "as a general rule the substitution of one ingredient for another in a prescription is not a matter of any material consequence,"—here the cynical Mr. Labouchere is joking, as he is expected by his readers to joke—he proceeds to relate an anecdote about a valetudinarian of his acquaintance who filed all his prescriptions religiously, and had a most imposing and interesting collection of them. After a time, when he felt in need of medicine he took to using his prescriptions without consulting the practitioner. He prided himself particularly on one of them, which he regarded as an invaluable cure for rheumatism, and as a great favour he one day made a present of it to Mr. Labouchere himself, who speedily discovered that the marvellous specific was simply a mild tonic prescribed by the medical man when his friend was complaining of loss of appetite. Strange to say, the infallible remedy never cured the poor valetudinarian's rheumatism again! "If, however," says Mr. Labouchere, in conclusion, "that prescription had been type-written it would probably never have cured his rheumatism at all, and in that case he would never have had the comfort which he actually derived from it for many years." Observe! not a syllable of regret for so ruthlessly breaking the charm. To some extent we agree with Mr. Labouchere that there are advantages in a patient not being able to read his prescriptions. We are not referring to the possibility of faith-cures, but to the well-known circumstance that many people not necessarily *malades imaginaires* love to develop views concerning their susceptibility to drugs, and to insist that they cannot take this, that, or the other when they know that these particular remedies are being given to them. This playing by the patient at the possession of an interesting idiosyncrasy may seriously hamper the medical man, who is generally driven thereby into Runic characters or Dog Latin.

THE ANTI-TOBACCO SOCIETIES.

ENGLAND is not the only country which fulminates against the use or abuse of tobacco. There is a corresponding French society, and its members have resolved to take time by the forelock, and have already commenced the organisation of a great protest to be put forward at the second congress of the anti-tobacco societies, which will be held in Paris during the exhibition of 1900. The leading spirit of the French society is the President, M. Decroix, from whom we have received the journal of the society containing a preliminary notice of the conference; and without going so far as to endorse his opinion when he says "Tobacco is always useless, often harmful, and sometimes homicidal," we agree with him in so far that we allow tobacco to be sometimes very harmful. It is, of course, a poison; but so is tea, as also coffee—two vegetable products which are consumed by nearly every inhabitant of either England or France. All three can be and very often are abused, but this does not do away with their reasonable use; and, with all deference to M. Decroix, tobacco is not always harmful. On the contrary, in these days of rush and hurry it has often a most soothing and restful effect. The French Society has prepared a series of questions for discussion at the congress, and in the prospectus sent out they invite anyone interested in the question to propose questions upon which they would like the opinion of the meeting. This is a sensible way of going to work, and if we might offer a suggestion it would be that these societies should devote themselves not so much to the getting rid of tobacco altogether, but to seeing that people, however poor, can always obtain pure tobacco. The tobacco sold in France is, to put it mildly, not good, and although in England it is possible to buy fairly good tobacco, it is next door to impossible to get it pure. That is to say, it is nearly always scented or treated in some way so as to give it an artificial flavour. Cigars are beyond the purse of any but a rich man, and as for cigarettes, the filth sold as such is beyond description. A pure tobacco society would be an admirable institution, and as for the traders saying "Customers like scented tobacco," the customer seldom gets the chance of smoking anything else. The truth is that, as in the case of highly-scented tea or soap, it is cheaper to "fake" inferior qualities of stuff than to supply the real thing. To be unsophisticated an article must be of good quality, but the craze for cheapness is ruining everything, and when people buy cigarettes at 1*s.* 11*d.* a hundred it is not to be wondered at that they get—well, an inferior article.

THE CASE OF THE PECULIAR PEOPLE.

MR JUSTICE RIDLEY'S action towards the Peculiar People who were recently convicted in his court was one of great wisdom. While recognising that they had acted for conscience' sake, and therefore refusing to make martyrs of them, he at the same time vindicated the law by requiring them to give sureties for future good behaviour. We congratulate the jury on their verdict of manslaughter, and our congratulations are due not in the least to any savagery in our composition, but to our knowledge that such verdicts are of great use to the public in helping them to distinguish between wholesome independence of opinion and mischievous faddishness entailing misery or worse upon others. If the Peculiar People would confine themselves to dying of their peculiarities it might be logical to say that it was a matter that concerned only themselves; but when their warped and narrow judgment conduces to the death of their helpless children it is time for the law to interfere. Piety is all very well, but when the behaviour which purports to be pious is the outcome of ignorant bumptiousness the would-be pious person must understand that the virtue he aims at will not excuse him for the sins he commits. The Peculiar People neglect their duty towards their neighbour, while their assertion that in so doing they are performing their duties towards God is only their assertion and is authoritatively contradicted by the rest of the world.

ACROMEGALY AT THE PATHOLOGICAL SOCIETY OF LONDON.

THE meeting of the Pathological Society of London on Tuesday last was of a highly interesting character, the main subject being that of acromegaly, to the morbid anatomy of which valuable contributions were made by Mr. Percy Furnivall, Dr. Rolleston, Mr. Pelham Lawrence, Dr. E. J. Smyth, and Dr. Norman Dalton, fully justifying the remark of the President, Dr. Payne, that this was probably the first time that so large a collection of specimens of this rare affection had been exhibited together. Mr. Furnivall, in particular, must be commended not only for the excellent description he gave of his case, but also for the pains he had taken to collect and analyse recorded cases. His statement that in every one of the thirty-four examples he had collected there was some affection of the pituitary body bears out the original observation of Marie, although in the present state of knowledge it is difficult to arrive at a conclusion respecting the relationship existing between the skeletal changes and the somewhat heterogeneous character of the lesions in the

pituitary gland. In no inconsiderable proportion, too, the thyroid body was also affected. Dr. Rolleston drew attention to the fact that in the more rapidly advancing cases of acromegaly the pituitary disease was of the nature of sarcomatous growth, a fact which, he said, had been pointed out by Sternberg. This author's monograph[1] is perhaps the most recent, as it is the most systematic, survey of the affection yet published. He distinguishes three types—the benign, which may last for fifty years and lead to but slight discomfort; the ordinary chronic acromegaly, lasting from eight to thirty years; and the acute malignant type, of from three to four years' duration. In speaking of its pathogeny Sternberg says that there are many theories current, and collates them under the heads of: (1) the nervous theory, held by von Recklinghausen and others, but now mostly discarded, that observer's case being recognised as syringomyelia; (2) the theory of atavistic perversion of growth, as suggested by Freund and Campbell; (3) the thymus theory of Klebs; and (4) the pituitary theory of Mairie, who contrasted the disease with myxœdema or cachexia strumipriva. Dr. Dalton at the above meeting advanced another theory—namely, that there was a tendency to general tissue hypertrophy, illustrated in his case by evidences of connective tissue hyperphasia, hypertrophy of the cutaneous papillary body, as well as of the viscera. That disease of the pituitary body may occur without any of the characteristic changes of acromegaly being present was mentioned by more than one speaker; but, as Mr. Butlin pointed out, it would be well in future for those who met with such cases to be careful not to overlook any concomitant changes that might suggest acromegaly. Dr. Payne's remark that cases of acromegaly in its incipient stages must occur, although they may pass unrecognised, is worth noting in this connexion. We may take this opportunity of expressing the hope that the new President's vindication of morbid anatomy as an essential part of pathological science in the admirable address he gave at the opening meeting of the session of the Pathological Society of London will be borne in mind by the members, and that the society will in this respect show greater activity than it has done for the past few years.

[1] Die Acromegalie. By Dr. Maximilian Sternberg. Vienna: A. Hölder. 1897. Price 4 marks 20 pf. This essay forms part of the seventh volume of Nothnagel's "Specielle Pathologie und Therapie" now in course of publication.

THE MAN WITH NO NONSENSE ABOUT HIM.

WITH reference to the cheese-paring policy or total neglect too often prevalent in municipal counsels where sanitary matters are in question a correspondent has sent us a vigorous letter in which the following passage occurs:—

"There are, unfortunately, men so constituted mentally that they hold in utter contempt all knowledge of which they themselves are not possessed or whatever subject fails to interest them. Especially abhorrent to them are matters that do not offer any immediate or visible advantage; indeed, with them everything is to be brought to this precious touchstone to be tested. 'The man with no nonsense about him' is a terrible stickler for justice as applied to others, which, indeed, seems to be all he desires, at least in cases where he may derive benefit from its performance. It is true he always stoutly maintains the necessity for being just before being generous, which axiom he administers as a kind of conscience salve after he has been guilty of a more than usually mean action. Shrewd in all matters concerning things in which he is interested, he shoulders his way to the front in most public questions; fluent in speech, his sophistical arguments often, alas, overrule the sounder opinions of less obtrusive men. In council his great aim is to reduce expense; he thinks he can find much better occupation for his time than in fadding about such questions as drains and sewers or in troubling his head as to the source from which he derives his water-supply. When an epidemic occurs he laments the slow advance of medical and sanitary science, which, in his opinion, should have prevented the outbreak. 'The death-rate is normal,' he will say. 'There is nothing the matter with the sewers,' 'the water-supply is all right' 'Let sleeping dogs lie,' &c. 'Time enough to spend money upon these things when they are known to be out of order,' howbeit he takes no trouble to inquire as to their condition. It is the influence of these wiseacres in municipal matters that frustrates the efforts of those who would avail themselves beforehand of scientific knowledge and who are sneered at as cranks and faddists. With what results full many a town can testify. For the sake of some trumpery present economy a whole district is exposed to the ravages of avoidable disease, with all its attendant misery and desolation."

Our correspondent deprecates any reference in his remarks to persons or to particular and recent calamities, but asks whether the picture he has drawn does not constitute "an easily recognised and all too common type." To this question we have to say that we consider that in "the man with no nonsense about him" he has depicted very accurately a person with whom all medical men are familiar—and disgusted.

THE CERTIFICATE NUISANCE.

THE question of hospital practitioners charging fees for filling up and signing certificates required by patients for making a claim on insurance and other club funds has been raised by a patient at St. Thomas's Hospital. In this instance a fee of 5s was claimed and paid. This claim was based on a misapprehension on the part of the medical officer concerned and was not made with the sanction or knowledge of the hospital authorities. Steps have at once been taken for the prevention of such an occurrence in the future. At the same time it should be clearly understood that a printed certificate of attendance at the hospital and of inability to continue his work is of course given to any patient who asks for it. But the question has arisen concerning insurance certificates, some of which are extremely elaborate and demand much time and thought in their preparation. They are increasing in number, length, and complexity. The whole question is one which must receive careful consideration so that some uniform method of dealing with them may be adopted at all the general hospitals.

THE CHEMISTRY OF THE CEREBRO-SPINAL FLUID.

THE composition of the cerebro-spinal fluid has been investigated by various chemists both in man and the lower animals, but without satisfactory results, partly perhaps because it has been examined not in healthy but in diseased conditions. The presence of a cupric-oxide reducing substance has been generally admitted, but whilst Halliburton observes, in the last edition of "Kirkes' Physiology," that it contains besides salts and proteids in solution, a substance which gives Trommer's test for sugar, it is, however, he goes on to say, not sugar, but a substance of the aromatic group called pyrocatechin. Hammarsten, however, in his "Physiological Chemistry," admits a copper oxide reducing substance and describes it as an optically inactive but "fermentable" substance, a statement that is not compatible with its being pyrocatechin. With the object of reconciling these differences Dr. E. Nawratzki, of the Dalldorf Asylum for the Insane, has undertaken an investigation upon the fluid in the lower animals and in man. He adopted the plan of making a Quincke's lumbar puncture, by which means absolutely pure liquor cerebro-spinalis can be obtained, and his first researches were made upon the calf. The mode of slaughter practised on these animals was favourable to the inquiry. Oxen, sheep, and pigs, on the other hand, could not be used because they were killed in a manner which rendered the procurement of the

pure fluid difficult or impossible. From the calf he obtained from 20 to 60 c.cm. of the fluid contained in the sub-arachnoid space. The fluid was limpid and colourless, of slightly saline taste, and contained neither flocculi nor coagula. Under the microscope isolated red and white blood corpuscles were frequently visible, probably driven in by the needle. The fluid was feebly alkaline and became opalescent on boiling. On the addition of a small quantity of acetic acid a finely flocculent precipitate was thrown down. On the addition of solution of soda and a trace of copper sulphate in seven out of twenty experiments a slight violet coloration was observed; in the remaining thirteen there was none. In all instances a positive result was obtained by the use of Trommer's test. No response was obtained from Nylander's test. In the cases in which the phenyl-hydrazin test was applied the results were positive. The doubtful and conflicting statements of writers in respect to the nature of the reducing substance Dr. Nawratzki believes to be due to the small quantity of fluid at their disposal. He accordingly mixed the fluids obtained from no less than 85 calves, and thus collected more than two litres, which were acidified with acetic acid and mingled with a considerable quantity of alcohol. The mixture was then divided into four portions. These were severally tested for a copper-reducing substance and for pyrocatechin, and the results of his experiments were that in opposition to Hoppe Seyler and Ransom he finds that in health a substance is present which in all its properties agrees with grape sugar. The percentage amount is smaller than that in blood, varying in different classes of the animal kingdom from one-tenth part to two-tenth parts per cent., whilst pyrocatechin is entirely absent.

A NEW LOCAL ANÆSTHETIC.

OF the making of new local anæsthetics there appears to be no end. The latest claimant rejoices in the name "p-amido-m-oxy-benzo-methylic ether." The German chemists, Einhorn and Heinz, who have experimented with this substance have adopted for it the more convenient term "orthoform." It is a white crystalline powder and is without odour or taste; it is but slightly soluble. However, it forms soluble salts with acids which, while they possess distinctly anæsthetic properties, are rather irritating when applied to mucous membranes. The powdered orthoform placed upon the surface of an ulcer or inflamed mucous membrane produces, it is said, insensibility of the part and its anæsthetic action persists for some time. It possesses the advantage of being non-poisonous, and so can be freely applied to the surface of burns and painful cancerous and other ulcers. It has been given internally in gramme doses in cases of gastric carcinoma. Its insolubility appears to be a drawback to its employment as a local anæsthetic for surgical work, but successful results appear to have followed its use at Munich for surgical operations.

FREE SHOOTING.

MATTERS in the County of London are rapidly approaching the happy state of things which used to exist in California and Australia in the "fifties," when the custom of shooting on sight was looked upon as laudable and justifiable. Four cases of shooting came before the courts on Nov. 2nd, another one on Nov. 3rd, and it has become quite a common thing for gangs of boys aged about fifteen years to perambulate the East End and Clerkenwell armed with revolvers. When these gangs meet there is trouble. Statements have appeared in the lay press to the effect that ten cases of shooting have been attended to at the Royal Free Hospital within the last ten months. This is a slight exaggeration, the correct number being eight up to Oct. 31st. Unfortunately education as given in elementary schools where we suppose these enterprising youths have been brought up does not as yet include revolver practice, so that harmless passers-by are often hit and sometimes killed. If only members of the gang suffered no one would object. Seriously though the custom must be put down at all costs. A licence to sell pistols or revolvers should be made to cost a large sum and a licence to carry one still more. The sooner the defunct Pistols Bill is brought in again and passed the better, for it is perfectly intolerable that in the greatest city in the world and after nearly thirty years' working of the Education Act a state of matters should be allowed worthy only of a frontier settlement. The magistrates, also, are much to blame for the ridiculously inadequate penalties they inflict when an offender is brought up for punishment; retribution, heavy and swift, should follow any case of shooting in the streets, except perhaps in the very exceptional case of the use of a revolver by a policeman.

THE EPIDEMIC OF TYPHOID FEVER AT LYNN.

THE outbreak of enteric fever at Lynn still progresses. Already the attacks number about 300, and some ten fresh cases occur daily. There can be but little doubt that the washing of filth into the Gaywood river, whence the corporation derive their water, is the cause of the outbreak, just as it was in 1892. Unfortunately, too, the ratepayers are themselves responsible for the large amount of disease which has occurred, for a majority of them persistently opposed new waterworks, and at last the Local Government Board had to intervene with a peremptory order. The delay occasioned by the townspeople prevented the new works being available before the beginning of this epidemic. Dr. Frederick St. George Mivart, of the Local Government Board, has been for some days past conducting an inquiry into the causes and means of spread of the disease. Our Special Sanitary Commissioner is making a detailed report for our readers, the first instalment of which will be found on page 1213.

THE BACTERIOLOGICAL EXAMINATION OF THE BLOOD.

IN recent years bacteriological examination of the blood during life has become more frequent. The *American Journal of Medical Sciences* for October, 1897, contains a summary of the results obtained by Dr. John Slade Ely. As a diagnostic aid such examinations have proved disappointing; the proportion of cases in which positive results are obtained is very small. As a means of throwing light on pathology, on the contrary, they are very valuable, explaining the occurrence of complications in diseases which usually are localised. Pyogenic germs have been detected in the blood during life in pyæmia, osteomyelitis, puerperal fever, erysipelas, and infective endocarditis; the pneumococcus in pneumonia and infective endocarditis; the bacillus coli communis in cystitis with a pyæmic condition; the gonococcus in infective endocarditis following gonorrhœa; the tubercle bacillus in tuberculosis; and the typhoid bacillus in typhoid fever. Some investigations by Kohn published in the present year are of great interest. In pronounced sepsis a positive result was always obtained, and in some cases the bacteria were present in large numbers. In a case of acute ulcerative endocarditis plate cultures of the blood yielded 200 colonies of streptococci and several of staphylococci. In 32 cases of pneumonia a positive result was obtained in 9. Of the latter 7 were fatal, and the 2 which recovered were complicated respectively with pneumococcus empyema and pneumococcus abscesses. Of the 23 negative cases 18 recovered. Of the remaining 5 the fatal result was due in 2 to secondary

streptococcus infection (empyema); the patient was alcoholic in 1; and the pneumonia was probably due to the influenza bacillus in a fourth. The high proportion of positive cases—28 per cent.—is very remarkable; so, also, is the prognostic significance of the presence of the pneumococcus in the blood, foreshadowing death usually, or, at any rate, complications, and its absence the opposite at least in cases of pneumococcus infection. In the Johns Hopkins Hospital *Bulletin* for June, 1897, Dr. E. Block relates a fatal case where the typhoid bacillus was obtained twice during life from the blood of the patient. In most cases such attempts fail. As the bacillus can, as a rule, be cultivated from the internal organs after death the writer infers that it must be present in the blood at some period during life in nearly all cases. We pointed out the fallacy of this mode of reasoning a short time ago in dealing with the subject of typhoid cholecystitis[1]—a criticism which the striking difference as regards extent of infection between the fatal and non-fatal cases of pneumonia shown above amply justifies. But the facts now published carry us further, and suggest for the infections in general the question (not to say conclusion)—Are not the cases which show infection of the blood the severe and the fatal ones, and those in which the blood is free milder and more prone to recovery? The usual failure of the blood-examination as a means of diagnosis is explained by this suggestion.

NURSING IN IRISH WORKHOUSES.

IF all that has been revealed during the last year or so stands the test of thorough investigation it is high time that the Irish workhouses were set in order, and we are therefore glad to find that a General Order of the Local Government Board has recently been issued bearing the same provisions as that for England, to which we recently adverted. If it is necessary in the case of the English workhouses it is still more so in the case of the Irish ones that paupers should cease at once and for ever to act in the capacity of nurses, and this necessary reform is made quite clear in the Order. We are glad also to find that paupers cannot be deemed qualified to act even as *attendants* in the sick wards without the previous sanction of the medical officer, and that the nurse is to take her orders directly from the medical officer as to the nursing of the sick and ventilation of the wards and so forth, instead of his orders being subject to the revision of the matron as heretofore. This new order also makes the very useful provision that the medical officer can demand extra nurses in times of stress of work or epidemics, and the master, who in small country workhouses is often only an ex-gate porter, is not allowed to exercise any discretion in the matter, but is to supply the extra nursing demanded. These provisions will certainly be very great gains—that both medical man and nurse shall be less fettered in matters medical and nursing. There are, however, two somewhat serious defects in this as in the English order. In the first place the term "trained nurse" is not clearly defined, or it would perhaps be more correct to say is imperfectly defined. Persons are said to be eligible for the post of superintendent nurse when they have "undergone for three years at least a course of instruction in the wards of a hospital or infirmary being a training school for nurses" (and recognised as such by the Local Government Board). It follows from this that although a person may be deemed by the authorities at the school where she was trained not sufficiently qualified to receive a certificate after examination at the end of her three years' training, she is nevertheless qualified to act as a superintendent nurse! Would it not have been better to word the Order to the effect that the nurse should have obtained a certificate of efficiency at an examination after three years' instruction at a recognised school of training? Again, in accordance with the present phrasing, many of the excellent nurses trained by the Workhouse Infirmary Nursing Association would be ineligible for the post of superintendent nurse, though they have often had much better training than some of those who are eligible for the post under the new Order as it now stands. Another difficulty which is bound to arise under the new Order will be that of procuring sufficient nurses who have been properly trained; and if the association gives up its good work, as seems likely if rumour be true, it is difficult to know where the nurses are to come from. Guardians had sufficient difficulty in former times in procuring trained nurses, but now their difficulty will be tenfold, and the sooner this question receives the consideration of the authorities the better. We fear the new Order will foster the tendency there is for every small workhouse infirmary to multiply its "*assistant* nurses" at the expense of efficient persons, and thus to turn itself into a training school, as it were. We cannot help thinking that this Order, like the English one, has been framed without sufficient advice from experts learned in matters medical and nursing.

[1] THE LANCET, June 12th, 1897.

THE PAYMENT OF CORONERS' JURIES.

IT is in the air that coroners' juries shall be paid at last, which will be glad tidings, not only for persons who are summoned on coroners' juries, but for that wiser section of the public which does not mind paying a trifle in return for valuable services. The Public Control Committee of the London County Council recently reported to the Council that they have come to the conclusion that any scheme which attempted to make class distinctions would be futile, and that they are of opinion that payment of a fixed sum to all jurymen should be made. They considered that 2*s.* for each attendance would meet the case fairly, and they estimated the average attendance of jurors at fifteen, making an annual cost to the County of London of about £7000. The report was referred back to the Public Control Committee to consider the question of raising the fee. The coroner's inquest rightly conducted is a valuable proceeding, and there is no reason why the jurors who are engaged in safeguarding all our lives by sitting on these inquiries should give their time and services for nothing. We hope and believe that the Council will take this view.

EMBOLISM OF THE SUPERIOR MESENTERIC ARTERY.

THE symptoms in the following case recorded by Dr. Karcher, of Basle, and published in the *Journal des Praticiens* of Oct. 23rd, 1897, are very characteristic of embolism of the superior mesenteric artery. A woman, aged forty-one years, with mitral obstruction, dilated heart, and failing circulation, entered a hospital. She improved under rest and digitalis. But on the evening of the third day she was suddenly seized with violent abdominal pain below and to the left of the umbilicus, and a little later with pain in the left leg. At the same time bloody motions came on. There were cyanosis and dyspnœa; the pulse was almost imperceptible; the extremities were cold and covered with clammy perspiration; and the temperature was 35·6° C. However, she revived after injections of caffeine and camphorated oil. On the following days the abdomen remained tender, but no ascites was present. Gangrene occurred of the left leg, which was amputated at the end of five weeks. The popliteal artery was found to be blocked by a thrombus. After eight days the patient succumbed to progressive failure of the circulation. At the necropsy the heart was found to be very dilated with thrombosis of the left auricle, mitral obstruction and insufficiency, aortic obstruction, and tricuspid insufficiency.

There were infarcts in the lungs, kidneys, spleen, and liver. At its origin the superior mesenteric artery was obstructed by a thrombus with a ramification in a pancreatico-duodenal artery. In the middle the thrombus was softened and suppurating, and communicated by a perforation in the vascular wall with a large pancreatic abscess. Probably the ischæmic pancreas had been infected from the intestine. The survival of the patient for almost two months is exceptional; cases of embolism of the superior mesenteric artery usually succumb in a few days.

THE PLAGUE IN INDIA.

WE are glad to learn from the Indian papers by this mail that there has been a satisfactory improvement in the health of Bombay during the week ending Oct. 16th, but the latest telegraphic intelligence states that there has been an increase of plague at Poona where the deaths are reported to number nearly 100 daily. Outbreaks of the disease have also occurred at Sholapore, Kankhal, and one case is reported at Madras. At Poona, in addition to the patients in the Hindu and Mohammedan plague hospitals, there are many in the cantonment hospitals and several Europeans have been attacked with the disease.

HOURS OF RAILWAY SERVANTS.

IT is with pleasure that we note in an introduction to the Report of the Board of Trade on its work under the Railways Regulation Act, 1893, for the year ending July, 1896-97, that Sir Courtenay Boyle is able to testify to the willingness of the companies to listen to the representations of the Department. The number of complaints also show a marked falling off, the figures for the past three years being as follows: 1894-95, 156; 1895-96, 97; 1897-98, 76. The danger of overworking railway employés, especially signalmen, has been demonstrated practically by many an unfortunate casualty, and it is gratifying to know that the Act is serving as a check to a state of things which was a menace to the lives of the public as well as an injustice to the railway servants. The number of hours worked in some cabins we still consider far too long, and we hope that the next report will show that an improvement in this direction has been made.

THE SPINAL CORD IN PERNICIOUS ANÆMIA.

AN important paper on this subject appeared some time ago in the *Nordeskt Medicinskt Arkiv* by Dr. Petrèn. He had examined the spinal cords in nine cases of pernicious anæmia, and in two of these, besides the usual symptoms of anæmia, there were also symptoms of an affection of the spinal cord. In four of the cases the vessels of the white substance of the spinal cord were affected with hyaline degeneration which could reasonably be regarded as a result of the cachexia. In five cases were found scattered small hæmorrhages in the cord, or sclerotic patches the result of such hæmorrhages; these are comparable to the hæmorrhages found in the retinæ in this disease. In two of the cases in which clinically no symptoms of affection of the spinal cord existed the posterior columns showed a chronic degenerative change. Of the two cases with symptoms of spinal-cord disease the first was that of a woman, aged thirty-six years, whose anæmia had lasted six months, and in whom the symptoms of affection of the spinal cord had been present for two months. These symptoms consisted of motor and sensory impairment in the limbs, ataxy, loss of knee-jerk, and in the later stages incontinence of urine. In the cord the posterior columns were much affected, the columns of Goll being almost completely degenerated, those of Burdach rather less so, the degeneration becoming less marked from below upwards. In nearly all the dorsal cord and in part of the cervical, the peripheral part of the cord except the zone of Lissauer was much affected, apparently by a somewhat acute destructive process. The second patient presenting spinal symptoms was a man, aged forty-two years, who had paralysis, gradually increasing, of his lower limbs, which began three years before his death. There was a spastic condition of his legs, but the condition of sensibility was not ascertained. In the spinal cord there was found widespread degeneration of the columns of Goll and Burdach. The right crossed pyramidal tract was also degenerated. In all cases of this description Dr. Petrèn says the fibres of Goll are probably first attacked in the cervical region. Later the columns of Burdach suffer, but the zone of Lissauer is spared. After the posterior cords the lateral are next attacked, and the affection may also spread to affect the anterior columns. Dr. Petrèn also examined the spinal cord in two cases of Hodgkin's disease, but found no alteration except that there were a few small hæmorrhages present.

THE LATE SIR RUTHERFORD ALCOCK.

THE distinguished diplomatist who passed away upon Nov. 2nd was, we are proud to say, a member of our own profession, as was also his father, Dr. Thomas Alcock. On completing his medical education he entered the marine brigade of the British auxiliary forces which were fighting in the Carlist and Miguelite wars in Spain and Portugal. After being appointed Deputy-Inspector-General of Hospitals he retired from the medical profession and entered the diplomatic service. Of his long and useful career in China and Japan we need not speak here, except to say that for over thirty years he served his country faithfully and well. No doubt his medical training, a training which braces up the faculties of observation and the power of drawing accurate deductions, stood him in good stead during his after-career; and like that other great medical diplomatist who is still with us, Sir John Kirk, he opened up countries practically unknown to Europe so that his own country was enabled to benefit by fresh fields of commerce, while at the same time neither administrator made the mistake only too common in some parts of the world of trying to alter or do away with harmless customs merely because they were strange to an European eye or mind. Men of this class are very builders of Empire, and happy is the country who has such at her disposal.

NERVE-DEAFNESS IN DIPHTHERIA.

AFFECTION of the labyrinth or auditory nerve in diphtheria is of the greatest rarity; it is unmentioned by almost all authorities. The following case is described by Dr. J. C. Wilson in the *American Journal of Medical Sciences* for October, 1897. A woman, aged thirty-three years, complained of sore-throat. The tonsils were covered by a dense, greyish-white exudation with abruptly margined borders, surrounded with hyperæmia. On the fourth day there were distressing tinnitus and loss of hearing, which latter became total on the next day. Antitoxin was injected, and the membrane disappeared in the course of two days. The tympanic membranes were bright red, but glistening and not bulging. Bacteriological examination failed to show the bacillus. On the ninth day there was loss of power of the muscles of the back of the neck, and later double vision and paresis of accommodation ensued. The patient gradually recovered and the membrana tympani became normal, but the tinnitus continued. Deafness was absolute with all tests. Six months after the attack the deafness, tinnitus, and slight vertigo persisted, as well as paresis of the muscles of the neck. Dr. Wilson suggests that the

failure of the bacteriological diagnosis may have been due to the previous use of antiseptics. He fairly insists that the condition of the throat, the rapid disappearance of the membrane after the use of antitoxin, leaving superficial erosions, and the pareses justify the diagnosis. The deafness was probably due to labyrinthine lesions. Moos, on examining the bodies of three children who died from diphtheria, found the membranous semicircular canals filled in many places with coagulated lymph, whilst the middle ears showed merely catarrhal changes.

THE LATE PROFESSOR HAUGHTON.

AMONG intellectual Irishmen few were more prominent and typical than Professor Haughton, M D. Dub., D D He was encyclopædic in his knowledge and his conceptions of knowledge. Divinity, mathematics, mechanics, physics, physiology, languages, medicine, all seemed alike easy to him. But it was in his nature and disposition that his chief charm lay. His geniality and humour were constant and sometimes irrepressible, even when subjects of grave moment were under discussion. He was a very familiar and distinguished figure in the General Medical Council on which for a great many years he represented Trinity College, Dublin. On questions of education, especially general education, he spoke with an authority to which no other member could pretend. But on essentially medical subjects, such as midwifery and infectious diseases, he spoke well and was always on the practical side, as one representing a country the social condition of which made medical help at once difficult to get and essential to have. Professor Haughton was for years on the Education Committee of the Council, and in this capacity he did great service. Proud of the great College of which he was so distinguished a representative, and ready as he was to fight for her whenever anything was said which seemed to conflict with her interests or her honour, he yet concerned himself with all the ordinary questions which engaged the attention of the Council both in its educational and its ethical work. And so it happened that when failing health compelled his reluctant resignation the members felt an unusual personal sense of loss and regret and that one would be missing from their midst who imparted to their discussions interest and wit and learning of quite an exceptional kind.

As recently intimated in our columns Sir William Gowers is to be entertained at dinner by the Society of Medical Phonographers. The occasion of the dinner is to congratulate Sir William Gowers on his knighthood, and although the members of the society have felt that the occasion affords them a peculiar opportunity for recognising the services which Sir William Gowers has rendered to the society, it is hoped that it may have a somewhat wider significance as a recognition of the debt which the medical profession in general owes to him. The dinner is to take place at Limmer's Hotel, George-street, Hanover-square, on Nov. 25th, at 7.15 for 7.30 P.M., and Sir William Broadbent is to occupy the chair. Anyone who wishes to be present is requested to apply to Mr. L. E. Creasy, 1, Windsor-road, Ealing, W., or to Dr. James Taylor, 49, Welbeck-street, W., from whom tickets (price 10*s*., exclusive of wine) may be obtained.

AT the meeting of the Clinical Society of London to be held on Friday, Nov. 12th next, a series of cases of Forcible Rectification of the Deformity in Pott's Disease of the Spine will be brought forward by Mr. A. H. Tubby and Mr. Robert Jones. Dr. Calot, the introducer of the method, will be present, and no doubt the cases will be subjected to full discussion.

THE November dinner of the Aberdeen University Club, London, will be held at the Holborn Restaurant on Wednesday, Nov. 17th, at 7 P.M. Dr. Robt. W. Burnet will take the chair, and intending diners should communicate with the honorary secretaries, Mr. J. Gerald Laing and Dr. James Galloway, at 54, Harley-street, W.

THE QUEEN has been pleased to give and grant unto Mr. Philip Demech, M.D Edin., licence and authority to accept and wear the insignia of Chevalier of the Order of Orange-Nassau, which the Queen Regent of the Netherlands, in the name of Her Majesty the Queen of the Netherlands, has conferred upon him in recognition of his services whilst actually and entirely employed beyond her Majesty's dominions as Dutch delegate on the Egyptian Conseil Sanitaire, Maritime et Quarantenaire.

The Lancet Special Commission

ON THE

METROPOLITAN WATER-SUPPLY.

XVIII.[1]

NEW RIVER COMPANY—*Continued.*

PRESENT CONDITION OF THE NEW RIVER—A SURVEY.

THE New River was originally made to convey water from the springs of Chadwell and Amwell to London. The total length of the river when first made was just under forty miles. This distance has been considerably lessened, short cuts in a more direct route having been made over some of the valleys. At first only spring water was conveyed, but after a time the amount proved to be insufficient and an extra supply was taken from the River Lee.[2] Of late years a number of wells have been made near the banks of the river and the water is pumped to augment the quantity which comes from Chadwell spring and from the Lee. In a few instances water is pumped direct from the wells for the supply of customers, but the greater part is pumped into the river and goes to Newington where after passing through the subsiding reservoirs it is filtered before distribution. The width of the New River varies from about 25 ft. in the widest part to 17 ft. in the narrowest.

Before describing the course of the river it may be well to give a brief account of the work which has to be done to keep it in order and of the way in which it is protected. The general work which has constantly to be done is that the banks of the river have to be kept in a good state of repair, the weeds which grow in the stream have to be cut, and trespassers have to be prevented from doing any damage to the water or to the banks. In order that these things may be efficiently carried out the river is divided into twelve divisions or "walks." Each walk is under the care of two men, the senior of whom is called the "walksman," and the assistant the "walksman's mate." It is the duty of these men constantly to perambulate the river to keep off all intruders, man and beast, to repair the banks where necessary, and to cut the grass on the walks which extend on both sides of the greater part of the course of the river. It may be interesting to mention as a curious matter of etiquette which has lasted a long time that it is usual for the walksman to look after the right or "upper bank" of the river as it is called and for the walkman's mate to look after the left or "lower bank." This custom is a constant one. During the

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[1] Nos. I., II., III., IV., V., VI., VII., VIII., IX., X., XI., XII., XIII., XIV., XV., XVI., and XVII. were published in THE LANCET of Feb. 20th and 27th, March 6th, 13th, 20th, and 27th, April 3rd, 17th, and 24th, May 1st, 8th, 15th, 22nd, and 29th, June 19th and 26th, and Oct. 23rd respectively.

[2] In this article the spelling of the Lee adopted is that given in various Acts of Parliament. Cartographers, including those employed in Her Majesty's Survey Office, usually spell the Lee—Lea.

summer a good deal of work has to be done in keeping the river free from weeds and for this purpose extra men are employed. From May to September weeds have to be cut about once a fortnight. The river weeds grow much more freely at the upper part of the river—that is, the part distant from London—than they do at the lower part. It may be noted, however, that the American weed grows only in the lower part. Above Hornsey it is hardly to be seen and at the upper part it does not occur at all. The way in which the weeds are cut is as follows. Several scythes, from eight to twelve in number, are shackled to a chain to each end of which a rope is fixed. One man walks on each bank of the river and the weeds are cut by a sawing motion, both men walking slowly forwards and each man alternately pulling his end of the rope towards him for a distance of about a yard. After the weeds are cut they float down and are collected by gratings placed across the river at intervals; they are removed from these and usually taken away to manure the land.

Each walk is provided with a punt, which is used not only when it is necessary to repair the banks of the river, but for carrying any materials which may be required for repairs. The punts are of uniform pattern. They are made of iron, and are 30 ft. in length, 2 ft. in depth, and 6 ft. in breadth.

The walks into which the river is divided are numbered from Clerkenwell upwards to Chadwell, and are as follows: (1) New River Head to Stoke Newington, (2) Stoke Newington to Hornsey, (3) Hornsey to Bowes Park, (4) Bowes Park to Winchmore Hill, (5) Winchmore Hill to Enfield, (6) Enfield to Turkey-street, (7) Turkey-street to Theobald's-lane bridge, (8) Theobald's-lane bridge to Turnford, (9) Turnford to Broxbourne, (10) Broxbourne to Rye House, (11) Rye House to Amwell, and (12) Amwell to Chadwell.

In the present survey of the river it has been found convenient to begin the perambulation at the intake from the River Lee and to give an account of the course of the river from that point to London. In the description which follows the left bank is spoken of as the "lower bank" and the right as the "upper bank." The distances which are given are approximate. They are not the result of accurate measurement, but in each case the distance was judged by observation and the result corrected by reference to the ordnance map, but the figures are always given in round numbers. The maps are taken from the latest ordnance maps, but in all cases corrections have been made in places in which changes have taken place since the ordnance survey was made.

Intake from the River Lee (see Map 1).—The water of the New River is taken from the Lee at a point between Hertford and Ware. The present gauge-house is situated quite close to the river and divided from it only by a towing-path. The arrangements which were formerly in use for gauging the quantity of water taken still exist in a building called the balance-house, which is situated a few yards off. The arrangement of the intake differs from that of the intakes of all the other metropolitan water companies, and it is the only one which is planned to give accurate results as to the quantity of water taken. The arrangement is simply a floating gauge. The principle on which it works ensures that the size of the inlet through which the water flows is constant, and the gauge is arranged to rise and fall according to the height of the river. The first arrangement of this sort was put up in the balance house. Although it is now no longer used it may be best to describe it first, as it is the simplest, if not the most ancient, form of floating gauge, and is not without historical interest. The house which contains it was built in 1732, when Mill was engineer to the company, and it was re-built in 1770, when Mill and Milne were the engineers. A boat floated up and down according to the height of the water. This boat was suspended from one end of a large oak beam, at the other end of which there was a sluice-gate. The sluice-gate, therefore, necessarily rose and fell according to the rising or falling of the boat. The size of the opening through which the water flowed being constant and the height with reference to the water being also constant it followed that the amount of water which flowed through was constant also. The intake at present used is guarded by a floating boom, and the water passes through an iron grating of which the bars are about 1 in. in width and the meshes 3 in. The boom and gratings keep out pieces of wood and other débris. The amount of water taken from the river daily is said to be 22,500,000 gallons. The sides and edges of the intake opening are formed of bronze, and the sluice-gate through which the water flows is carried by a cross head which rests on a pair of iron boats. In consequence of this arrangement the amount of water remains constant, the depth of the intake being always 16 in. and its width 7 ft. 10 in. The height of the river is recorded by a float of which the index is in the sluice-house. When visited on Jan. 5th, 1897, the water of the Lee was brown and turbid. On that day the height of the water in the river was 2¼ in. above the normal level. Except in very rare instances the water is constantly flowing through this inlet from the Lee down into the New River, but there is an arrangement by which it can be shut off if necessary. The conditions which make it necessary to shut off the water are occasional floods, which cause great turbidity of the water. The supply has also to be cut off when it is necessary to do any work in the course of the stream just below the intake. The way in which water can be shut off is as follows:—There are a number of iron plates 20 in. deep and 8 in. wide; each is provided with a steel "ear" which fits on to a circular iron bar 1½ in. in diameter. By this arrangement practically the whole of the water can be shut off. During the winter of 1896–97 this arrangement was used twice for short periods during flood.

Course of the New River.—From the intake the water is conducted in an open channel which at first passes through open meadows.

50 yards.—Occupation bridge. From this point there is a fence with two bars, 3 ft. in height. The fence is to keep off the cattle from the upper bank.

200 yards.—Here there are the remains of a disused sluice.

270 yards.—Iron bridge. At this point the river is close to the Manifold Ditch.

Manifold Ditch.—This ditch commences at the Hertford Sewage Works and goes into the Lee Navigation Canal at a point below Ware Lock. The length of its course is about a mile and the point at which it discharges into the Lee is about a mile below the intake of the New River Company. For a distance of about half a mile the ditch runs in a direction parallel with the New River and is situated on its upper bank. The ditch has a concrete bottom, the sides forming a segment of a circle. They are lined with bricks laid on edge and set in a concrete bed. The state of the sewage effluent is said to vary considerably. On June 15th it was not particularly offensive. The ditch is conducted under the New River in two 24-in. cast-iron pipes.

250 yards.—Manifold Ditch passes under the New River, and the river then goes under the Hertford branch of the Great Eastern Railway. Up to this point there is a fence on the lower side of the New River; the part between Manifold Ditch and the New River is not fenced. From the point at which the river passes under the railway the fence begins, and it runs on each side of the river for the greater part of the remainder of its course. The standard fence is 2 ft. 6 in. in height and has two wrought-iron rails.

50 yards.—At this point is the White House sluice, which was put up in the year 1746. Here there is a weir. In case of flood the dam boards are removed, and the water flows down a ditch into the River Lee. During the winter of 1896–97 there was one flood during which the dam boards were taken out. The White House contains a spoke and pocket sluice-gate, which is used in flood time to prevent too much water from passing down the course of the river.

50 yards.—At this point a marble gauge is situated; the base of this is formed of marble. As originally planned the water passed through an opening 6 ft. in width and 2 ft. in depth. At the present time there are easement pipes at each side of the gauge, which is no longer used for its original purpose. The easement pipes are 24 in. in diameter. At a distance of 200 yards from this point across the meadow the Chadwell Spring is situated.

Chadwell Spring.—The spring at Chadwell discharges itself into a circular basin or reservoir, of which the depth at the centre is about 18 ft. The reservoir is about 20 yards in diameter, and except at its outlet is surrounded by turfed walks. The amount of water obtained daily is estimated at 4,000,000 gallons, but the quantity varies greatly. It is much diminished after a dry summer. During part of the years 1892–93–94, little water rose for some days. The amount yielded by the spring is gauged twice a week. The water is usually quite clear, but it is occasionally milky. The water from Chadwell Spring joins the branch of the New River which conveys water from the Lee at a distance of 200 yards from the spring. At a point 100 yards further the New River goes close to the road which leads from London to

NEW RIVER COMPANY.

MAP 1.

A survey of the New River from the intake (River Lee) to Broxbourne, showing "Walks" 12, 11, and 10.

Hertford. Here there is a bridge leading to Broad Mead, where there is a well and pumping station.

440 yards from Chadwell Spring is Huggins' Shed bridge. Between the New River and Hertford-road there are high spiked railings.

200 yards.—Amwell End bridge. At Amwell End there is a well and pumping station. Near this point the river is crossed by a foot-bridge for a path which leads from the London-road to Ware Station. Near it is Amwell-road bridge.

300 yards.—Red House bridge.

375 yards.—Copsill's bridge.

150 yards—Lowfield bridge.

440 yards.—Amwell Hill. Here there is a well and pumping station

Amwell Sluice.—Near the pumping station there is a sluice house built of wood and having a slated roof. It extends right across the river. There are three bays. The amount of water which passes down the New River is regulated at this point.

200 yards.—Occupation bridge in private grounds.

150 yards—Foot bridge and Amwell-road bridge close together. Here is the junction of walks 12 and 11.

Amwell Pond.—At Amwell was one of the springs from which water was obtained for the New River. There is now no spring in the place at which it formerly existed. There are two islands in the pond which is near to the public highway, and there is here a place at which the public have a right to water horses.

500 yards.—Amwell Marsh. Here there is a well and pumping station. There is a church path from Amwell to St. Margarets, the path passing along the lower bank of the New River for about 1000 yards to St. Margarets-road.

150 yards.—Foot-bridge. St. Margarets Bury House is situated here on the upper bank.

100 yards—Foot-bridge, occupation road, St. Margarets Bury.

250 yards.—Occupation bridge, St. Margarets Bury.

350 yards—Rye Common. Here there is a well and pumping station on the lower bank of the river.

50 yards.—Hoddesdon-road bridge.

440 yards—Marsh-lane occupation bridge. Here the river is close to the Great Eastern Railway, Hertford branch.

1000 yards.—Rye bridge road. This is near Rye House station and to the historic house which has given its name to the neighbourhood. From Rye House station on the lower bank of the river a public path leads to Hoddesdon and Broxbourne: the upper bank is fenced in.

400 yards.—Hoddesdon sewage farm bridge. Here is the junction of walks 11 and 10.

The sewage farm is on the lower bank of the river and covers an area of from twelve to fourteen acres. The sewage effluent from Hoddesdon farm goes into the River Lee.

100 yards.—On the lower bank of the river are two walksmen's cottages

600 yards—Hoddesdon. Here on the upper bank is a well and pumping station. Near the engine-house a 36-in. easement pipe conveys some of the water under the Essex-road and across a meadow into the river, a distance of about 200 yards The course of the easement pipe is shown in the map.

Here is Essex-road bridge.

440 yards—Lynch Mill bridge. The public path, which begins near Rye House, follows the course of the lower bank of the New River to Broxbourne, a distance of about two miles.

100 yards—Foot-bridge to Hoddesdon

440 yards.—Admiral's Walk. Occupation bridge opposite New House, Hoddesdon, which is on the upper bank.

150 yards.—Upper Marsh-lane bridge, Hoddesdon.

300 yards—Occupation bridge, foot-path.

250 yards—Gas House bridge.

300 yards—Broxbourne. Here there is a well and pumping station, situated on the upper bank. At this point a branch of the Spital Brook comes to the upper bank. This brook arises in the woods about two miles away. There is a spring, and the stream also receives surface water. It has not been used for the supply of the New River for twenty years or so. The water now is conducted by a brick channel under the New River, and flows away into the Lee. In the old cut, which was formerly used to augment the supply of the New River, a certain amount of water is still kept because by doing so the appearance of the neighbourhood is improved and this is done for the sake of the people who live in the houses near. When the brook is cleared out, which is done yearly, the water collected in this part of the cut is allowed to pass into the river. There is a 6-in cock between the Spital Brook and the river.

500 yards.—Broxbourne Station bridge.

100 yards.—Broxbourne Bay. Here there is a sluice, worked by cogged gear. There is a fall of about 6 in. The fall varies from 3 in to 1 ft. according to the state of the river. St. Augustine's Church is here on the lower bank of the river.

60 yards.—Broxbourne Bridge.

30 yards.—Broxbourne Church path bridge.

30 yards—Broxbourne Church-lane bridge.

550 yards—Occupation bridge.

The description of the survey should now be followed on Map 2.

100 yards.—Broxbourne-road bridge. Here is the junction of walks 9 and 10. (See Map 2.)

100 yards.—Bridge, and occupation bridge.

30 yards—Page's-lane bridge.

440 yards—Brickfield-lane bridge and foot path.

350 yards.—White Horse-lane bridge. This bridge has an easement culvert on each side to convey part of the water of the river. It is therefore called a "three-way bridge." From this bridge to Wormley foot-bridge there is a public foot path on the upper bank of the river.

300 yards.—Manor Farm (Wormley) occupation bridge.

30 yards.—Wormley foot bridge. Here the public foot-path crosses the river.

880 yards.—Ground water is conducted under the New River from the right to the left. There is an aqueduct over Watery-lane, Turnford. Here there was formerly a wooden trough. About 300 yards above this point was the Turnford loop of the New River, which has since been replaced by a straight cut. The site of the Turnford loop is given in the map (Map 2).

400 yards.—Turnford. Here there is a well and pumping station on the lower bank. From Turnford Station to Cheshunt there is a public foot path on the lower bank of the river.

600 yards.—Brookfield occupation bridge

Cheshunt.—Here there is a disused well and two ponds having areas of 8 and 13 acres respectively, formerly used as reservoirs. This water is not now used for the supply of the New River, and the flood water which collects in the ponds is conducted under the river in a culvert and flows away to the Lee. At Cheshunt there are two cottages, one occupied by a walksman, the other by a "gratesman"—a labourer employed to keep the grate in working order, and who is held responsible for its efficiency. Here is Brookfield-lane bridge. From this point to Clark's-lane bridge there is a public foot-path on the lower bank

440 yards.—Clark's-lane foot-bridge.

Just beyond this point is Kilsmore Island. It is near the upper bank of the river.

150 yards.—Church-lane bridge, Cheshunt. One gas main here crosses the river. On the upper bank there is a market garden.

300 yards—Church-path bridge.

200 yards.—Pest House bridge. On the upper bank at this point are situated a nursery and Cheshunt College.

600 yards—College-road bridge. Here is a tank for the supply of unfiltered water for the Cheshunt roads.

150 yards—Grove House private foot bridge.

300 yards.—At this point a path from Cheshunt Church comes to the upper bank of the river, crosses over at Theobald's Park foot-bridge, and then passes along the lower bank of the river to the south end of Theobald's Park, a total distance of about a mile and a half.

880 yards—Theobald's Park foot-bridge.

200 yards—Theobald's-lane. Here is the junction of walks 7 and 8. From this point the river runs through Theobald's Park.

30 yards—Occupation bridge, Theobald's Park.

300 yards—Theobald's Pond and Island.

700 yards—Theobald's Park occupation bridge. Here the foot-path crosses the river. Both banks of the river are private from this point.

100 yards.—New River passes from Hertfordshire into Middlesex.

440 yards.—Bullsmore-lane bridge. This is the public road from Bull's Cross to Waltham.

150 yards.—Manor Farm (Bull's Cross) occupation bridge.

440 yards.—Turkey-street bridge, Edmonton.

MAP 2.

A survey of the New River from Broxbourne to Forty Hill, showing "Walks" 9, 8, and 7.

300 yards.—Maiden's bridge. Here there is a grating. From this point the river is conducted in two 48-in. pipes for a distance of 350 yards. Under the bridge passes Cuffley Brook, which is in the map called Maiden's Brook. This conducts the land drainage from the country on the west side of the river and takes it into the River Lee crossing from the upper to the lower bank.

A short distance below Turkey-street bridge the original course of the New River has been altered. The water is now conducted across the valley in an aqueduct. The disused part of the river went in a nearly westerly direction, and part of this has lately been restored and the banks have been raised. The part of the river which has lately been repaired will be used for the conveyance of water from a new well which has been dug at White Webbs. The water from this well is to be conveyed in a pipe which will open into this part of the river, and the water will flow in an open course in a direction exactly opposite to that which was taken by the water when this part was used for its conveyance to London before the aqueduct was made. The description which here follows of this part of the New River will be best understood by the study of the accompanying map (Map 2). The water from White Webbs will go into the open course channel of the river at the place marked with an arrow, and from this point the water will flow in an easterly direction and join the New River just before it passes into the aqueduct over Maiden's bridge. The part to the west of the point at which a pipe will enter the river from White Webbs will still be disused. The old course of the river can be easily traced up to Flash-lane Cottage.

The following is a brief description of the course from Maiden's bridge aqueduct to Flash-lane.

300 yards.—Road from Enfield to Cheshunt.

200 yards.—Occupation bridge in the grounds of Myddelton House. A few years ago the water in this part of the river was stagnant. The banks of this part have been raised and turfed over. The banks have been raised to the extent of about 1 ft. to 2 ft. for a distance of about one-third of a mile.

300 yards.—Wooden occupation bridge. Here there is a sluice gate which can be used for allowing the water to pass into Maiden's Brook.

200 yards.—From this point goes the line of pipes to White Webbs well. From this point the river has not been cleared out nor have the banks been raised. Weeds are growing in it. On June 16th the water was clear, but it was stagnant.

880 yards.—White Webbs Road.

200 yards.—Here, near the bank, is the 18-in. pipe from White Webbs. The pipe from the well has already been laid from this point to the well.

440 yards.—Enfield Flash bridge. Here there is an overflow weir to Maiden's Brook.

200 yards.—Above this is Flash foot-bridge. Here the "loop" of the New River ends—i.e., in a *cul de-sac*. The last 200 yards are next Flash-lane.

The return part of the loop has been filled up and the ground it occupied has been taken by adjoining landowners.

From this necessary digression we return to the new course of the river.

Maiden's Bridge.—There is an aqueduct over Cuffley or Maiden's Brook. It is about 25 yards in length, and the water from the river is conducted in two 48-in. pipes, which are visible in the aqueduct house, which is covered with corrugated iron, and has a walk between the pipes. The pipes are about 20 ft. above the level of the bed of the Cuffley brook.

50 yards.—Forty Hill Church foot-path.

250 yards.—Pipes open into the river again. There are three pipes which open into the river.

The survey will be continued with similar detail and illustration.

(To be continued.)

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next general meeting of this association will be held at 11, Chandos-street, London, W., on Wednesday, Nov. 17th, under the presidency of Dr. T. W. McDowall. The Parliamentary Committee will meet at 11.30 A.M. and the Handbook Committee at 12 noon. The council meeting will meet at 2 P.M., and the general meeting will be at 4 P.M., when new members will be elected and papers read. The members will dine together after the meeting at the Café Royal, Regent-street, at 6.30 P.M.

MEETING OF THE HOSPITALS ASSOCIATION.

A LARGELY attended meeting of this Association was held in the board room at Charing-cross Hospital on Oct. 28th to hear from Sir Sydney Waterlow, chairman of the Distribution Committee of the Hospital Sunday Fund, an account of the methods pursued by the Distribution Committee of the fund to which he belonged in making their awards to the various hospitals, and from Mr. R. B. D. Acland, chairman of the Hospital Saturday Fund, an explanation of the method of distribution adopted by his fund.

Mr. H. COSMO O. BONSOR, M.P. (President of the Hospitals Association), acted as chairman.

Sir SYDNEY WATERLOW, Bart., then read the following paper:—

"Several of the friends and warmest supporters of the Hospital Sunday Fund have asked me to attend here to-night to explain to them, and through them to the public generally, the system upon which the money collected on Hospital Sunday is divided between the hospitals, dispensaries, convalescent homes, and other institutions applying for an award. Collections for the benefit of the Fund have now been made for twenty-five years successively, and the total sum collected to July 30th, 1897, was £913,489. It is not surprising that the friends of the movement and the public generally should be desirous of understanding the manner in which this large sum has been divided among the numerous institutions applying for a share of the funds. This desire has been no doubt further stimulated by the fact that probably half a million of money will be raised this year by the Prince of Wales's Hospital Fund for London. When in February last His Royal Highness made his appeal for contributions to this Fund he stated: 'I am aware that the task of distributing the funds when collected will not be without its difficulties. It may be desirable in the future to seek the assistance of representatives chosen by the hospitals, but for the first year we shall rely upon the coöperation of the Distribution Committee of the Hospital Sunday Fund.'

"The Distribution Committee consists of the Lord Mayor, as President, and ten members chosen annually by the Council; some of the members have served upon the Committee for more than twenty years. The Fund was started at the Mansion House in the year 1873. I was the first President and treasurer, and have been chairman of the Distribution Committee from the commencement. I have rarely missed attendance at any of the meetings, and consequently am perhaps more responsible than any other person for the preparation of the laws by which the distribution of the money is governed, and for the interpretation which has been given to those laws from time to time. All the members of the Committee have necessarily gained considerable experience in dealing with the important duties cast upon them. We have upon the Committee a very eminent surgeon, and a physician of high standing in the city of London; the professional knowledge of these two gentlemen has been of great assistance to the Committee. It has also been thought right not to elect upon the Committee any gentleman who held office in connexion with any one of the hospitals applying for a share of the money. For some years after the collections were commenced, none of the three endowed hospitals—St Bartholomew's, St. Thomas's, or Guy's—applied for or received any award. The first application from Guy's was in the year 1868. No award has hitherto been made to St. Thomas's, as the governors of that hospital did not see their way to deliver copies of their accounts made out in the form prescribed by the hospital authorities and the Council, and certified by a public accountant. It is, however, understood that the treasurer of St. Thomas's will have the accounts of his hospital prepared in the prescribed form, and that an application will be made next year for a share of the Hospital Sunday Fund. St. Bartholomew's Hospital has at present no need for any assistance from the fund.

"It should be borne in mind that the work of the Distribution Committee is governed and controlled by a series of laws passed by the constituents of the fund, who meet annually at the Mansion House as representatives of the congregations contributing the money on Hospital Sunday.

These laws direct that only those hospitals and dispensaries which are managed by committees duly constituted, shall be allowed to participate in the fund. The awards to hospitals, &c., shall be primarily based on the average total expenditure of each institution for the last three years after deducting therefrom (1) a sum equal to the income derived from endowments and realised property; (2) the amount received in legacies exceeding £100 each, unless such legacies have been necessarily spent to meet the current expenditure of the institution; and (3) the expenses of management.

"In every case the merits and pecuniary needs of the institution concerned shall be fully inquired into and considered by the Distribution Committee, and the award made shall be determined in accordance with the judgment of that Committee upon such merits and needs, provided that in no case shall the grant be reduced below the arithmetical basis, or withheld, until a conference shall have been sought with the managing committee of the hospital affected. The payments made by or on behalf of patients shall be dealt with, in each case, as the Committee of Distribution may see fit. This was found necessary owing to the very great variation in the amounts and in the circumstances under which patients' payments are made. No institution, to the benefits of which admission can only be gained by election from the general body of subscribers, shall be eligible for grants from the fund. The Committee shall have power to set aside 5 per cent. of the total amount of collections for the purpose of surgical appliances. There are several other minor provisions, but they have no material effect on the amount awarded. A careful consideration of these laws clearly indicates that the Distribution Committee are to recommend awards to each hospital, &c., in accordance with its needs and merits, subject to the definite directions for arriving at these important factors. Every institution desirous of applying for an award has to send to the secretary of the Fund, not later than February or March in each year, an application to participate. This must be accompanied by a correct copy of the printed report, and of the receipts and expenditure of the institution, made out upon the prescribed form agreed upon between the council of the Fund and the managers of the leading London hospitals. These accounts are then required to be analysed on a form supplied for the purpose in duplicate. As these forms are all alike, the comparison of the relative pecuniary needs is not difficult.

"The expenditure is divided under two heads—maintenance and management. Maintenance includes provisions, surgery, domestic establishment charges, rates and taxes, rent (if any), salaries and wages (except for those persons engaged in the administration), miscellaneous expenses, with a separate item for extraordinary repairs and new buildings, which is always separately considered. The administration or management includes official salaries and commissions, official printing, postage, telegrams, &c., official advertisements, law charges, incidental management expenses, with a separate item for appeals and festival expenses, separately dealt with. It will be seen that maintenance, in other words, includes all the money spent in the care and cure of patients, while the administration is the cost of the office management controlling the work. The festival expenses I will hereafter refer to. The income is divided under two items—charitable revenue and proprietary revenue. The charitable revenue includes subscriptions, donations, the Sunday and Saturday funds, church collections (if any), festivals, legacies under £100, or exceeding that sum, if absorbed in current expenditure. The proprietary revenue, or secured income, includes interest on legacies exceeding £100 (when not required for current expenditure), dividends, interests, rents, &c., from invested property, fees paid by nurses, and patients' payments.

"In order to arrive approximately at the needs of the hospital, the average of the moneys spent in maintenance and management in each of the three past years is carefully calculated. From the total expenditure in each year we then deduct the proprietary or secured annual income. The money expended on the average of three years in the treatment and support of the patients, less the proprietary revenue and the expenses of management, is regarded as the financial needs of the hospital, which have to be provided from year to year from the public and from uncertain sources. This is called the basis of the award, and is raised or lowered at the discretion of the Committee as soon as they have determined the merits of the particular institution. The task of arriving at the merits is no doubt more difficult than determining the financial needs and rests to a greater extent on the discretion of the Committee. Detailed information, including the number of beds, the average number occupied daily during the last year, the average number of days each in-patient was resident, the average cost of each in-patient per week, and the average cost of each out-patient, as far as this can be calculated, is given for the past year; the average number of in-, out-, and lying-in patients, both counting renewals and without renewals; and also the total number of attendances for the past three years is all laid before the Committee.

"Although the figures thus furnished in no way enter into the arithmetical calculation of the needs of the hospital they have to be most carefully considered when determining the merits; the average cost of each in- and out-patient and the numbers of beds occupied, as compared with those unoccupied, varies so very much in different hospitals. Let me take eight of the large general hospitals, viz., Charing-cross, Guy's, King's College, London, St. Mary's, Middlesex, University, and Westminster, the management in which may be regarded as satisfactory. The cost of each in-patient per week varies from 26*s.* to 36*s.*, while in smaller hospitals and special hospitals it reaches as much as £2 8*s.* In determining whether the amount is or is not excessive, the Committee have naturally to bear in mind the nature of the work carried on—the character of the diseases dealt with, especially in special hospitals, as some classes of patients, if efficiently treated, cost much more than others. The percentage which the money spent on administration bears to the money spent on maintenance is necessarily a very important factor in determining the relative merits of different hospitals. Taking the eight hospitals previously referred to, the percentage of management to maintenance varies from 3·883 per cent. to 13 per cent. This may be to some extent accounted for by slight variations in the manner in which the accounts are stated, but not materially. In the special and smaller hospitals the percentage varies from 2 per cent. to 31 per cent. It must, however, be borne in mind that in smaller hospitals the expenses of management are unavoidably much larger than in the larger hospitals; but there can be no doubt that money contributed to the large, well-conducted hospitals, goes very much farther, and secures the efficient treatment of a larger number of patients than in the smaller hospitals. The Committee have, however, always considered that when comparatively small hospitals are erected in outlying districts at some distance from existing hospitals they ought, if well managed, to have every encouragement. A lithographed abstract analysis of the accounts of each hospital is given to every member of the Committee, attention is called to the particulars I have referred to—no decision is recorded until these points have all been discussed, a vote is then taken in each case.

"It should always be borne in mind that whenever the Committee are of opinion that the information before them does not seem to justify them in recommending an award equal to the natural basis disclosed by the figures, they are required by Rule 5 of the laws of the Constitution to ask for a conference with the managers of the hospital affected. During the present year conferences were invited with the managers of thirty-eight institutions, and in thirty cases deputations were interviewed. In several of these cases the basis was materially reduced, the managers promising that the defects complained of should be remedied in the future, and in two cases the management was so bad that no award was recommended. The item, cost of appeals and festival expenses, is one which gives the Committee much trouble, as it cannot be dealt with upon any hard and fast line. Speaking, however, for myself, I have always held that where these expenses result in bringing into the treasury of the hospital only 50 or 60 per cent. of the sum contributed by the persons present at the festivals they ought not to be encouraged.

"I have endeavoured to make the method adopted by the Distribution Committee as clear as possible. I will now give two illustrations or examples with the view of rendering my statement more intelligible.

"*London Hospital.*—The average total expenditure for 1894, 1895, and 1896, after deducting each year the proprietary revenue, was £44,884. From this sum we deduct the average cost of management for the same years—viz., £2277, leaving £42 607 as the needs of the hospital to be collected annually from the outside. This forms the

primary basis, to be raised or lowered on the merits, at the discretion of the Committee.

"*St. George's Hospital.*—The average total expenditure for 1894, 1895, and 1896, after deducting each year the proprietary revenue was £18 441 From this sum we deduct the average cost of management (£1481), leaving £16,960 as the needs of the hospital to be collected annually from the outside. This forms the primary basis, to be raised or lowered at the discretion of the Committee.

"The question as to the continually increasing number of out-patients at our large hospitals has been much discussed of late, and these discussions have disclosed a great diversity of opinion, but as I have previously stated the number of out-patients treated at each hospital has hitherto been regarded by the Distribution Committee simply as evidence of the amount of work done in treating the sick poor, and has not been an important factor in determining the amount of the awards to each hospital, I have therefore refrained from dealing with it here.

"The system we are discussing may be very shortly summarised thus: By means of the analyses of the accounts to which I have referred, the Committee are enabled to arrive at the sum of money spent by each hospital on the average of the past three years in the treatment and support of the patients Deduct from this the proprietary revenue, or ensured income, and you have the figures representing the needs of each hospital. These figures form the primary bases of the awards. The merits are then discussed on reference to the accounts, and from information placed at the disposal of the Committee from various sources. If there is no fault to find with the management, the figures forming the bases are confirmed or raised; if the management is unsatisfactory, a conference is invited with the managers. The money available for distribution is then divided in accordance with the figures of the bases. It has varied during the last twenty-five years from 1*s.* 10*d.* to 2*s.* 2*d.* on each basis, or approximately, on each £ needed for the support of all the hospitals, &c. The variation is governed by the amount collected each year. It should also be remembered that the money is distributed within a few weeks after it has been collected. I have always felt that those who give the money intend it for the relief of the sick poor in the year in which it is contributed.

"I think I am justified in saying that this system of distribution has been thoroughly successful and satisfactory to the public. The awards have for the last twenty-five years been submitted for the approval of the Council, consisting of 100 members, at a meeting in the Mansion House, and published in the London press. On one occasion only has any alteration in the awards recommended by the Committee ever been thought necessary and made. If we take the average for the last twenty-five years of the contribution to the hospitals from the Sunday Fund at 2*s.* in the £ of the needs of each institution applying it will be seen that the Fund provides only one-tenth of the cost of the treatment and support of the sick, leaving the other nine-tenths to be provided by subscriptions, donations, &c., from the public and from legacies or other sources.

"But this is not by any means the only benefit which the hospitals and the public have derived by the action of the Committee of Distribution. With the assistance and full concurrence of the secretaries and officials of the hospitals all the accounts of income and expenditure are now prepared on one uniform plan and certified by a public accountant before they are subjected to the detailed criticism of the Committee. This arrangement has undoubtedly in many cases ensured much greater economy and an improved management of the hospital funds. Again, my experiences of the last twenty-five years has much strengthened my early conviction that an annual sermon in the churches and chapels followed by a collection was the best, and likely to be the most permanent, method of raising money for hospitals, for it is well that on one Sunday in each year all the ministers and the whole population in the churches and chapels should forget for the moment their denominational differences and join hearts in one Christian duty upon which all are agreed—viz., the duty of relieving the sick poor, each one as far as he is able; and I feel sure that a large number of those who contribute small sums at the collection on Hospital Sunday are so impressed with the sermons that they give large donations at a later period or leave legacies for hospital purposes.

"In conclusion I wish it to be distinctly understood that I alone am responsible for the opinions expressed in this paper. It has never been read to my colleagues on the Committee, and therefore I have no authority to speak except for myself."

Mr. R. B. D. ACLAND, chairman of the Hospital Saturday Fund, in opening the discussion said it afforded him great pleasure to address the meeting on the system of distribution adopted by the Hospital Saturday Fund, for it was only by criticism based upon full knowledge of the facts that any advance could be made A meeting of this sort should have but one result, namely, that the Metropolitan Hospital Sunday Fund, the Hospital Saturday Fund, and now the Prince of Wales's Fund should distribute their money on the same systems. That had long been his ideal and he looked upon this meeting as the greatest step to progress in that direction since the inauguration of the Fund. He wished to call attention to the difficulties which must confront any distribution committee. The first was the extreme difficulty of getting accurate returns of the number of patients from the different hospitals, and he was perfectly certain that anyone who had served on a distribution committee could bear him out in that statement The second difficulty was peculiar to the Hospital Saturday Fund which was a working man's organisation For the past twenty-three years the Hospital Saturday Fund had been trying to work out its own salvation in the way of collecting funds. It had received no assistance whatever from people with a particular knowledge of hospital work, and if there were defects in the system it was due to the fact that they had to work it out from paper rather than from an actual knowledge of the inside work of hospitals. Sir Sydney Waterlow's system might be summed up thus. Given the arithmetical basis it was left to the Distribution Committee to say whether the grant should be made on that basis or not. It might be a very excellent plan where, as in the case of the Hospital Sunday Fund, the committee was composed of men who possessed the fullest knowledge of hospital administration, but it would prove a very bad system in the case of the Hospital Saturday Fund, where no one on the committee possessed such special knowledge. The first thing to be decided was what were the institutions to which awards should be made. They had found from time to time that institutions had applied for grants which were neither hospitals nor dispensaries, and therefore they had thought it necessary to frame a definition restricting grants to such institutions as treated the sick poor only, including convalescent homes and nursing institutions. The latter, he understood, did not participate in the Hospital Sunday Fund distribution. They had had to make this definition so as to exclude medical missions, the Salvation Army, &c. The next thing was to arrive at the amount to be distributed. Certain percentages were first deducted for what he might call the outside working of the Hospital Saturday Fund, which was not a mere collecting and distributing body. It did a great deal of other useful work in connexion with ambulance and first aid, the supplying of necessaries for such work, the supplying of surgical instruments, and the granting of loans to people who wished to obtain the benefits of convalescent homes, but who could not afford to pay ready money. From the total amount collected after payment of expenses 6 per cent. was deducted for surgical appliance work, and 8 per cent for the purchase of letters of recommendation. A sum not exceeding 1 per cent. was also deducted for the Morley Convalescent Home, which was the outcome of the Hospital Saturday Fund, and they quite naturally desired to give in some way additional support to their own child. Then special grants might be made for certain dispensaries, ambulance work, &c. All that practically came to about 13 or 14 per cent. of the whole collection The balance was divided amongst hospitals, convalescent homes, and different dispensaries. The basis of award except in one particular resembled very much that of the Metropolitan Hospital Sunday Fund. It was based upon the relief afforded, economy practised, and efficiency shown. They attempted to arrive at the efficiency of the hospitals as far as they could discover it by a series of questions asked with a view to show the probability of the hospitals being properly managed. As an example of the questions he instanced the following: Have you a committee of management? How is it elected? Is there an independent finance committee? By whom elected? Is there an annual meeting of the governors and subscribers? If so, give date and where held, and state whether reporters are admitted? Questions of that sort gave outsiders certain knowledge of the hospital being properly managed. Is there

efficient control? If so, are the people properly elected to give reasonable guarantee for such control being exercised? Are you willing to give to the Hospital Saturday Fund in return for grants letters in the same proportion as you give to ordinary subscribers? May patients be visited on Sundays, and if so, at what hours? That represented the view of the working man, and it seemed a reasonable one. He (the working man) thought that a guinea subscribed by himself and his shopmates was likely to be as valuable as the rich man's guinea. The use made of the questions was this. A total number of marks of fifteen were given for efficiency. Each question which was answered adversely or which showed that the hospital was not likely to be well managed would cause the hospital to lose a mark. Provisions were also made to try to secure that the small hospital should not get too large a proportion of the funds as compared with the larger institutions. Then with regard to economy, the Metropolitan Hospital Sunday Fund practically left the matter to the Committee of Distribution. The Hospital Saturday Fund tried to work out a series of rules which had the effect of comparing fairly the economy shown between the different hospitals. The system was based upon the cost per bed in the institution and the cost per out-patient as shown by the returns. The cost of a bed varied according to the kind of work which was efficiently done in the hospital. It would not be fair to compare a general hospital with a hospital like Brompton, and so they had tried to group the hospitals in classes and work out averages for the cost per bed and out patient for each one of the classes. The classes were five in number—namely: (1) general and ophthalmic hospitals; (2) hospitals for diseases of the throat, cancer, chest, epilepsy, fistula, skin, and for diseases of women; (3) children and dental; (4) lock hospitals and orthopædic; and (5) lying-in. The cost per bed was again divided into four classes. If the cost of a bed is £60 no mark is lost at all, but if the cost is £90 four marks are lost. In regard to the cost of management, where it was 10 per cent. one mark was lost; 13 per cent., two marks; 16 per cent., three marks; 19 per cent., four marks; 22 per cent., five marks; and above 22 per cent., six marks; so that it was quite possible under this system that hospitals extremely expensively managed would get no marks at all for economy. The amount distributed was divided so as to bring in these considerations of relief, economy, and efficiency. Of the total amount to be distributed five-sixths was given for relief and efficiency and one-sixth for economy. As regarded relief, the difference between the Hospital Sunday and Saturday Funds, he thought, was smaller than appeared at first sight, for by deducting the proprietary revenue some account must be taken of the work which was done. The Hospital Saturday Fund did it much more directly. They took the number of patients actually treated and a certain number of marks were given, for it was obviously necessary in a proper system that some consideration should be given to the income which was in the possession already of the institution, otherwise a hospital like St. Bartholomew's would get a larger grant than the poorest hospital in the whole of London. For the purpose of relief marks, only those who did not pay for themselves or were paid for out of the proprietary revenue of the hospital were counted. There were certain hospitals in London which were really paying institutions, and a rule had been made that a hospital which received 75 per cent. or upwards of the cost of maintenance from patients should not receive any award. If any of the subscribers to the Funds desired the benefits of such institutions the Fund bought letters for them. Then with regard to the relief marks for in-patients they had been seeking how it would be possible to help hospitals who closed their wards for fear of running into debt by asking for a return of the daily average of beds occupied and the number of beds in the hospital which could be occupied if funds permitted. One mark was given for every two beds not occupied. In the out-patient department marks were awarded according to the number of patients treated. Roughly speaking, one mark was given for every 2000 to 800 patients. It would be clear that at some special hospitals the average number of individual attendances of out-patients would be greater than at a general hospital, and in such cases proportionate amounts were granted.

The Rev. C. H. GRUNDY thought that overlapping of philanthropic movements was one of the curses of the age. He would like to see the two funds amalgamated.

Sir HENRY BURDETT pleaded for full discussion and criticism from the large number of representatives of hospitals who he knew were present. He did not know how Mr. Acland could justify the system, which as he (Sir H. Burdett) understood it worked out in this way. You took off marks for inefficiency up to a maximum of 23 per cent. for management, which entailed a loss of six marks. After that the charity might spend on management 11¾d. out of every shilling they received from the public, but they would only lose six marks. Before disposing of one single penny to the hospitals 8 per cent. was taken off for letters. He did not see any justification for this. Since Mr. Acland had become chairman of the Hospital Saturday Fund he had devoted a great deal of time to it, and he (Sir H. Burdett) was quite clear that whatever was thought of his system of distribution everyone would be unanimous upon one point, and that was that much that was good in the Hospital Saturday Fund was largely due to the attention to duty which had characterised Mr. Acland's tenure of office.

Canon GRAHAM thought the system adopted by the Mansion House Fund was superior to that of the Hospital Saturday Fund.

Lord STAMFORD said it had been stated and denied that the number of out-patients counted in the allocation of grants. He understood that Sir Sydney Waterlow would say that a small amount of weight would be given to the number of out-patient attendances, and he gathered that Mr. Acland would allow that more weight was given by the Hospital Saturday Fund to these attendances. He thought the public would be much interested in hearing what amount of weight was given by the Funds to this point.

Mr. COHEN asked what was the relative cost per cent. of the distribution of the two Funds. (Mr. CUSTANCE, the secretary of the Metropolitan Hospital Sunday Fund, here interposed with "distribution and collection," which caused the speaker to amend his question.)

The Rev. Prebendary KITTO pointed out that the two Funds approached the matter of distribution from two different points of view. The Hospital Saturday Fund was looked upon as a system of assurance and the Hospital Sunday Fund as a system of charity. Amalgamation he thought absolutely impossible.

Mr. RYAN (St. Mary's Hospital) said that the system adopted by the Hospital Saturday Fund was one which a skilled man would learn to apply in an exceedingly short time. Once the basis was settled it was no more difficult than that adopted by the Metropolitan Hospital Sunday Fund. But a good many objections could be taken to the constituent parts of the system when it was examined point by point. To take an example. Where a bed cost £60 the full number of marks for economy was given; when £70 was reached one mark was taken off, and so on. Now it was clear to him that it did not in the slightest degree follow that the institution whose cost per bed was the cheapest was the most economical. With regard to the working-man's guinea being worth as much as the rich man's guinea, he pointed out that a gentleman who gave a donation of thirty guineas was entitled to three in-patients' letters and a certain number for out-patients. Everyone knew that £30 did not provide for one patient, let alone three, but the greater part of the letters were never used.

Mr. THIES (Royal Free Hospital) suggested that a committee consisting of the secretaries of hospitals might be allowed to examine the two systems of distribution. He thought it most desirable that the two Funds should make themselves more in touch with the institutions by appointing small committees to visit the hospitals.

The Rev. N. BROMLEY (King's College Hospital) said that large general hospitals only received from the Hospital Saturday Fund about a quarter of the sum granted by the Hospital Sunday Fund.

The CHAIRMAN, in closing the discussion, said there was not the slightest doubt that both Funds had done their best and in an impartial way.

Mr. ACLAND in replying, pointed out the extreme difficulty of getting at the facts with regard to the working of hospitals and especially with regard to the number of patients who attended the hospitals. With regard to the objection that certain deductions were made before any sum was distributed there were certain expenses in training men in ambulance work and supplying the necessary apparatus. Surgical appliances were also supplied. This was also done by the Metropolitan Hospital Sunday Fund and he did not see why the Hospital Saturday Fund should not do the same. He had come to the conclusion that £60 per bed was too low and the figure would be altered. The probable explanation of that amount being taken was that

some hospital had sent in that estimate. That, again, illustrated the fact that a number of men were trying to distribute without full knowledge of the facts. He hailed with delight the suggestion with regard to a meeting of hospital secretaries. The members of the Fund did their best to visit hospitals, but they were all working men and for the most part had to do their visiting between seven and ten in the evening. A speaker had said that you could not judge of economy by taking the cost per bed and out-patient. Would he suggest a better plan? Referring to the question of the worth of the working man's guinea, he said that about 22,000 letters were issued a year, and of that number perhaps 90 per cent. were used. In return for these they distributed a sum of money which worked out at about 15*s.* each for all the letters distributed. Speaking with reference to the way in which the merits of an institution were arrived at he quoted from Sir Sydney Waterlow's paper, and remarked that while he (Mr. Acland) had explained how it was done Sir Sydney Waterlow had not. With regard to the cost of distribution and collection he could not deal with the relative cost. The cost of the office expenditure of the Metropolitan Hospital Sunday Fund was some 8 per cent. less than the cost of the office expenditure of the Hospital Saturday Fund. The total amount of the expenditure of the Hospital Saturday Fund included every single penny down to a postage stamp. In the case of the Hospital Sunday Fund a large amount of work was done gratuitously. The large church collections were not the consequence of a single sermon but of an enormous amount of gratuitous work. The work of the Hospital Saturday Fund could not be done that way. He was quite sure that Mr. Cohen did not wish to pit the two Funds against each other, but he was glad that Mr. Custance's remark had given him an opportunity of delivering himself in regard to this matter. Some five or six thousand collections were made for the Hospital Saturday Fund every week. With regard to out-patients, taking Charing Cross Hospital as an example, he said there were 21,000 out-patients last year, and one mark was given for every two thousand. With reference to the loss of marks above 23 per cent. in relation to management there were provisions which prevented unfairness. With regard to 8 per cent. being set aside for letters other funds were not blameless in this respect.

Sir SYDNEY WATERLOW said the cost of collecting and distributing the Hospital Sunday Fund was about 3½ per cent. He quite agreed that it would be difficult to amalgamate the two Funds, but it did not follow that the two Funds could not be distributed upon the same plan. No one would rejoice more than he to have some kind of conference with reference to that matter. He had no faith in the figures supplied with regard to the out-patient departments, for, as had been pointed out, many patients went to a hospital on from five to eight occasions in a year. He believed the hospitals gave the best information they could. With regard to the question of merit as judged by the Hospital Sunday Fund, which had been described by one speaker as "slap-dash," he said there were men on the committee with a large experience of hospital business. He hoped that the use of letters would be dispensed with. He hoped to see the day when people would be admitted and treated free. It was the letters given to subscribers that really made the most serious abuse of the out-patient department. If the two Funds could meet that question might be discussed with some advantage to both. If the secretaries of hospitals could meet together any recommendation they might make would be listened to with attention and respect.

Votes of thanks to Sir Sydney Waterlow, Mr. Acland, the chairman, and the officers of Charing-cross Hospital for the use of the board room terminated the proceedings.

MANCHESTER MEDICO-ETHICAL ASSOCIATION.—At a general meeting of this association, held on Oct. 29th, in the Queen's Hotel, Manchester, Dr. E. Rayner in the chair, Mr. R. B. Anderson delivered an address on Medical Defence, illustrating the subject by a narration of his own case, a full account of which has already been given in our columns. A motion of thanks to Mr. Anderson for his address, which was unanimously adopted, contained a resolution that the questions of the advisability of supporting Mr. Anderson's appeal to the House of Lords should be referred to the committee of the association "for the consideration of what practical measures could be taken to carry the issues involved to a satisfactory result."

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE quarterly Comitia of the Fellows of the Royal College of Physicians of London was held on Oct. 28th, the President, Sir SAMUEL WILKS, Bart., being in the chair.

There were admitted to the Membership of the College: W. C. Bosanquet, M.A., M.B. Oxon., M. G. Foster, M.A., M.D. Camb., F. J. Poynton, M.D. Lond., H. R. Smith, M.D. Lond., J. P. Stewart, M.A., M.D. Edin., and W. H. B. Stoddart, M.B. Lond.

Licences were granted to 116 candidates who had passed the recent examination (34 being under the new regulations).

A communication was read from the Foreign Office forwarding a medical report and poisoned arrows from Uganda, and requesting an examination of the poison. On the motion of the Senior Censor, seconded by the Registrar, the specimens were directed to be sent to Dr. Woodhead for examination and report.

Communications were read from Mr. Trimmer, reporting the proceedings of the Council of the Royal College of Surgeons of England on July 29th and Oct. 14th.

A request by Mr. W. J. Harvey for permission to consult the Harvey manuscripts in the possession of the College was referred to the Library Committee, and an application from Dr. G. Turner, Medical Officer of Health for Cape Colony, requesting recognition of their laboratories and of the practical courses held there, for the Public Health Diploma of the Royal Colleges was referred to the Committee of Management.

A letter was read from Mr. James Robert Wallace (Editor of the *Indian Medical Record*) respecting a scheme of medical registration for India which he had brought under the notice of the General Medical Council. Sir JOSEPH FAYRER considered the proposal a reasonable one, and thought well of the scheme. Sir DYCE DUCKWORTH said that the scheme had already been before the General Medical Council, and it was understood that if it was again discussed there he would state that it had the support of the College.

A memorial on the subject of medical aid societies from the medical men of Great Yarmouth was read, and the Registrar was requested to reply to it in the same terms as the reply recently sent to a similar memorial from the profession at Norwich.

The secretary to the Senate of the University of Edinburgh reported the award of the Murchison Scholarship to Percy Theodore Herring, M.B., B.C.

Letters were read from Dr. Robert Farquharson resigning the Fellowship of the College, and from Dr. H. Llewellyn Williams resigning the Membership. The resignations were duly accepted.

A communication from his widow notifying the death of Professor Heidenhain, of Breslau (Baly Medallist, 1889), was read, and the Registrar was instructed to express the sympathy of the College with her in her bereavement.

The report of the adjudicators of the Weber-Parkes Prize was read, and permission was granted to Dr. Ransom to publish his work.

A report was received from Dr. Pavy, Sir Dyce Duckworth, and Dr. Lauder Brunton, delegates from the College to the International Medical Congress at Moscow in August last; and the thanks of the College were voted to them.

On the motion of the Registrar, certain alterations in the by-laws relating to the examinations for the Licence were adopted for the second time.

Dr. WASHBOURN then called attention to the course of study required for the First and Second Examinations of the Conjoint Board and asked for the appointment of a committee to report to the College upon the desirability of modifying the regulations with respect to the subject of elementary biology. He pointed out that the introduction of this subject in the extension of the curriculum to five years in 1892 had seriously interfered with the work of the student in anatomy and physiology, an interference not compensated by the amount of biological knowledge gained. He suggested that biology might be withdrawn, but as such a course would derange teaching another alternative might be to modify the schedule and deal with the subject under comparative physiology or else to require that biology should

be taken before the commencement of anatomical and physiological studies. He moved for the appointment of a committee to inquire into the subject and to suggest a remedy if thought desirable.

Dr. ROSE BRADFORD seconded the motion, stating that his experience as teacher and examiner led him to endorse Dr. Washbourn's remarks: he pointed out that prior to 1892 there was an examination in elementary physiology at the end of the first year.

Dr. NORMAN MOORE admitted the importance of perfecting the scheme of examinations, although he thought it most undesirable to make frequent changes in the curriculum. This scheme had only been tried for five years, and it was certainly hoped that the subjects of chemistry, physics, and biology would come to be part of the secondary education of the country. Already a number of schools had been recognised as giving the necessary instruction, and if only biology could be generally taught in such schools the objections to it as a preliminary science subject would vanish. He supported the motion.

Dr. ORD deprecated too frequent interference with the scheme of examinations; Dr. PAYNE also urged that no change should be made without deliberation and consultation with medical school authorities.

Dr. STARLING said that the introduction of biology was largely due to the belief that the additional (fifth) year of the curriculum was to be given to the preliminary sciences, but instead of that the time devoted to them was deducted from that assigned to anatomy and physiology. He characterised the study of biology by the medical student as being a "pure luxury," and said that it could not be learned properly in the time alloted, which time was therefore wasted. There was no good in trying to mend what was radically bad.

Dr. ISAMBARD OWEN considered it injudicious to lessen the amount of science required of the medical student and did not put much value on the science taught in secondary schools.

The resolution was then put and carried and the President nominated the committee as follows: Dr. Church, Dr. Gee, Dr. Payne, Dr. Norman Moore, Dr. Washbourn, and Dr. Halliburton.

The audited accounts for the year ending Sept. 29th last were presented as well as the quarterly report of the Finance Committee.

Reports were submitted from the Committee of Management and from the Laboratories Committee. Dr. Norman Moore was re-elected a member of the Committee of Management and Dr. Payne of the Laboratories Committee.

The quarterly report of the Examiners for the Licence was received, and also a list of books presented to the library during the last quarter.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

THE members of this association and their guests to the number of 158 dined together on the evening of Nov. 2nd, in the International Hall of the Café Monico, the President of the association, Professor A. MACALISTER, F.R.S., Professor of Anatomy in Cambridge University, being in the chair. The guest of the evening was Field-Marshal Lord Roberts, V.C., G.C.B. The other guests included Surgeon-Major Sir George Scott Robertson, K.C.S.I., Dr. Sansom, the Rev. Oliver Inskip (headmaster of Framlingham), Admiral Kinahan, Mr. Robert Anderson, C.B., LL.D., Mr. Butcher, Q.C., M.P., Dr. Dawson Williams, Mr. Battle, and upwards of thirty ladies.

The loyal toasts having been duly honoured, Sir WALTER FOSTER proposed "The Services," and said that Irishmen took a prominent part wherever there was any fighting to be done—it was one of the glories of their race. He coupled the names of Admiral Kinahan—a genuine "son of the soil"—and Sir George Robertson, whose heroic deeds at Chitral were matters of history. The latter, in responding, paid an eloquent tribute to the bravery and genius for organisation of Irishmen in the army and made special allusion to young Harley who led the decisive sortie from Chitral; to Aylmer who won the Victoria Cross at the gates of Nilt Fort in 1891, and to Fowler's conspicuous bravery at Reshun in 1895.

Sir W. MACCORMAC, in proposing the health of the guest of the evening, said that admiration for Lord Roberts was not confined to his own countrymen, who naturally were very proud of him as an Irishmen, but was felt by every subject of Her Majesty. It was not known to many that during several days of his memorable march to Kandahar his temperature was over 100° F. His pluck in refusing then to give up the splendid task he had set himself was one of the finest things recorded in the annals of the world. The generosity of Lord Roberts in the allusions he makes in his famous book was only surpassed by the modesty with which he referred to his own actions. "No wonder," said Sir William MacCormac, "that Lord Roberts is so much beloved in the army that he is spoken of by Tommy Atkins all over the world as 'Bobs.'"

LORD ROBERTS in reply, said that the ranks, not only of the three learned professions, but of the public services were full of distinguished Irishmen, and his own experience led him to assert that Irishmen were unrivalled as soldiers, and to say from his heart that there were no better fellows in the world than army medical officers, among whom he was proud as an Irishman to recognise that a large number of the most distinguished came from "the old country." He was glad to see so many of the fair sex present and would like to ask them whether it was not the case that Irishmen made the best husbands. He was certain of this, that Irishwomen made the best of wives. It was a source of great gratification to him to know that some of the highest positions in the medical profession in England were at present occupied by such distinguished countrymen of his as Sir Richard Quain, Sir William MacCormac, Sir James Dick, and Professor MacAlister.

Dr. SANSOM proposed "Prosperity to the Association" and hoped that it would succeed in one of its objects—viz., the removal of the disability preventing the holders of Irish diplomas from competing for honorary appointments at some of the English hospitals.—Professor MACALISTER briefly replied.

Dr. PHINEAS ABRAHAM proposed "The Health of the Ladies," a toast which was responded to by Sir CHARLES CAMERON and the Rev. O. INSKIP.

The proceedings were enlivened by some excellent songs rendered by Mr. Reginald Groome and Mr. Franklin Clive.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6516 births and 3716 deaths were registered during the week ending Oct. 30th. The annual rate of mortality in these towns, which had been 16·9 per 1000 in each of the two preceding weeks, rose again last week to 17·6. In London the rate was 17·7 per 1000, while it averaged 17·6 in the thirty-two provincial towns. The lowest rates in these towns were 9·5 in Cardiff, 10·3 in Croydon, 10·5 in Leicester, and 10·7 in Brighton; the highest rates were 21·3 in Liverpool, 22·2 in Sheffield, 24·0 in Bolton, and 25·7 in Wolverhampton. The 3716 deaths included 463 which were referred to the principal zymotic diseases, against 415 and 429 in the two preceding weeks; of these, 117 resulted from measles, 98 from diphtheria, 76 from "fever" (principally enteric), 74 from diarrhœa, 55 from scarlet fever, and 43 from whooping-cough. The lowest death-rates from these diseases were recorded in Croydon, Swansea, Huddersfield, and Bradford; and the highest rates in Burnley, Halifax, Blackburn, and Wolverhampton. The greatest mortality from measles occurred in Wolverhampton, Birmingham, Burnley, Blackburn, and Halifax; from scarlet fever in Derby and Halifax; from "fever" in Blackburn, Sheffield, and Sunderland; and from diarrhœa in Burnley, Blackburn, and Preston. The mortality from whooping-cough showed no marked excess in any of the large towns. The 98 deaths from diphtheria included 65 in London, 5 in Liverpool, 4 in West Ham, 4 in Birmingham, 3 in Cardiff, 3 in Wolverhampton, and 3 in Leicester. No fatal case of small-pox was registered during the week under notice either in London or in any other of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was

3682, against 3692, 3725 and 3685 on the three preceding Saturdays; 416 new cases were admitted during the week, against 400, 440, and 342 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 268 and 279 in the two preceding weeks, further rose to 326 last week, but were 36 below the corrected average. The causes of 47, or 1·3 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Cardiff, Bradford, Hull, Newcastle-upon-Tyne, and in thirteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, and Preston.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·1 and 20·3 per 1000 in the two preceding weeks, declined again to 19·9 during the week ending Oct. 30th, but exceeded by 2·3 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·6 in Perth and 16·6 in Leith to 23·7 in Aberdeen and 24·2 in Dundee. The 593 deaths in these towns included 35 which were referred to diarrhœa, 15 to whooping-cough, 12 to scarlet fever, 8 to measles, 6 to "fever," and 3 to diphtheria. In all, 79 deaths resulted from these principal zymotic diseases, against 84 and 86 in the two preceding weeks. These 79 deaths were equal to an annual rate of 2·7 per 1000, which was 0·5 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had increased from 12 and 27 in the three preceding weeks, declined again to 15 last week, of which 13 occurred in Glasgow. The deaths referred to scarlet fever, which had been 17 and 4 in the two preceding weeks, rose again to 12 last week, and included 5 in Glasgow, 3 in Aberdeen, and 2 in Edinburgh. The 8 fatal cases of measles showed a slight further increase upon the numbers recorded in recent weeks, and were all registered in Glasgow. The deaths referred to different forms of "fever," which had been 6 and 13 in the two preceding weeks, declined again to 6 last week, of which 2 occurred in Glasgow and 2 in Edinburgh. Of the 3 fatal cases of diphtheria 2 were recorded in Edinburgh. The deaths from diseases of the respiratory organs in these towns, which had been 122 and 144 in the two preceding weeks, declined to 137 last week, and were 15 above the number in the corresponding period of last year. The causes of 37, or more than 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 24·0 and 21·2 per 1000 in the two preceding weeks, rose again to 28·2 during the week ending Oct. 30th. During the past four weeks of the current quarter the death-rate in the city has averaged 23·8 per 1000, the rate during the same period being 16·5 in London and 18·9 in Edinburgh. The 189 deaths registered in Dublin during the week under notice showed an increase of 47 upon the number in the preceding week, and included 8 which were referred to the principal zymotic diseases, against 14 and 13 in the two preceding weeks; of these, 5 resulted from diarrhœa, 2 from scarlet fever, and 1 from diphtheria, but not one either from small-pox, measles, whooping-cough, or "fever." These 8 deaths were equal to an annual rate of 1·2 per 1000, the zymotic death-rate during the same period being 2·4 in London and 2·3 in Edinburgh. The fatal cases of diarrhœa, which had declined from 10 to 2 in the three preceding weeks, rose again to 5 last week. The deaths referred to scarlet fever, which had been 1 and 2 in the two preceding weeks, were again 2 last week. The mortality from diphtheria also corresponded with that recorded in the preceding week. The 189 deaths in Dublin last week included 41 of infants under one year of age and 40 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons considerably exceeded the numbers recorded in the preceding week. Eleven inquest cases and 9 deaths from violence were registered; and 70, or nearly a third, of the deaths occurred in public institutions. The causes of 11, or nearly 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ARMY MEDICAL STAFF.

SURGEON-CAPTAIN DILLON assumes Medical Charge of the Departments at Portsmouth. Surgeon-Major Reade has left Woolwich for special duty in India. Surgeon-Captain Edye has taken over Charge of the Station Hospital and Detachment of No. 8 Company, Medical Staff Corps, Newcastle-on-Tyne, vice Surgeon-Major Mitchell. Surgeon-Major Beatty, M.D., has been warned to be in readiness to embark for India.

Surgeon-Colonel Charles A. Atkins retires on retired pay.

INDIA AND THE INDIAN MEDICAL SERVICE.

The services of the under-mentioned officers are placed temporarily at the disposal of the Government of Bombay for employment on plague duty:—Surgeon-Lieutenant Gwyther (Bengal), Surgeon-Lieutenant Clemesha (Bengal), Surgeon-Lieutenant Rainier (Bengal), and Surgeon-Lieutenant Walton (Bengal). The services of the under-mentioned officers are replaced temporarily at the disposal of the Military Department under the Government of the North-Western Provinces and Oudh:—Surgeon-Captain Baker (Bengal), Surgeon-Captain Cadell (Bengal), Surgeon-Captain Morwood (Bengal), Surgeon-Captain Fischer (Bengal), Surgeon-Captain Manifold (Bengal), and Surgeon-Captain Young (Bengal). The services of the under-mentioned officers are replaced at the disposal of the Military Department:—Surgeon-Captain Collins, A.M.S., Surgeon-Lieutenant Morgan, A.M.S., and Surgeon-Lieutenant Howell, A.M.S.

NAVAL MEDICAL SERVICE.

The following appointments have been notified:—Staff-Surgeons: Herbert W. G. Doyne to the *Hawke*, and Octavius S. Fisher to the *Rodney*. Surgeons: Cornelius Bradley to the *Jackal*; Charles S. Bennetts to the *Lion*; Edward Cooper to the *Jaseur*; Charles R. Sheward to the *Excellent*; Eustace Arkwright to the *Alexandra*; Walter K. Hopkins to the *Pembroke*; Philip N. Randall to Ascension Hospital; George Wilson to the *Victory*, additional; Sidney H. Youel to the *Penguin*; and Morris C. Longford to the *Orlando*.

VOLUNTEER CORPS.

Rifle: 2nd (Angus) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Captain R. Grant to be Surgeon-Major. 4th Volunteer Battalion the Devonshire Regiment: Surgeon-Lieutenant C. F. Glinn to be Surgeon-Captain.

DEATHS IN THE SERVICES.

Sir Rutherford Alcock, aged eighty-eight years. He entered as surgeon in the Marine Brigade which took part in the Miguelite and Carlist Wars, and eventually retired as deputy inspector-general.

Surgeon Major-General Sir William Alexander Mackinnon, F.R.C.S. Edin., LL.D., Honorary Surgeon to Her Majesty the Queen, Knight of Grace of the Order of St John of Jerusalem in England, at the age of sixty-seven years. He served with the 42nd Regiment in the Crimea, and was present at Alma, Balaclava, and the siege of Sebastopol (Knight of the Legion of Honour). During the Indian Mutiny he was surgeon on the personal staff of Lord Clyde. After acting as Assistant Professor of Clinical and Military Surgery at Netley he accompanied the Ashanti Expedition in 1874 as principal medical officer, and occupied the same post at Malta and Gibraltar in 1880 and the nine following years. He was appointed Director-General of the Army Medical Department in 1889, retiring on a pension in 1896.

Brigade-Surgeon-Lieutenant-Colonel John North, M.R.C.S. Eng., L.S.A., I.M.S., at Bellary, aged fifty years. He was appointed an assistant surgeon in 1869, and surgeon in 1873. He served in the Afghan War of 1879–80, for which services he obtained the medal. In 1881 he was promoted to be surgeon-major, and in 1886–87 served with the Burmese Expedition, for which he obtained a second medal, in 1889 he became surgeon-lieutenant-colonel, and in 1893 brigade-surgeon-lieutenant-colonel.

Surgeon General R. Gilborne, A.M.S. (retired), at Folkestone. He saw much service in both the Crimean War and the Indian Mutiny (Sebastopol medal with clasp and Turkish medal).

Surgeon-Major Edward John Burton (retired), at Hove, on the 31st ult. He was present at the defence of M'Carthy's

Island from an attack by a force of natives, and assisted to work the guns in action, for which service he was mentioned in despatches. He was in medical charge of a wing of the 65th Regiment during the rebellion in Ceylon in 1848, and served in the Crimean Campaign, being present at the siege and fall of Sebastopol (medal with clasp and Turkish medal).

Army Medical Manœuvres in France.

Under the orders of Surgeon-General Van Merris, principal medical officer of the Saint-Martin Hospital, some advanced manœuvres were recently carried out near Versailles, the base hospital being established in that town and the field hospital at Velizy, close to the scene of operations. The preliminary steps—that is to say, the military phase of the proceedings—bore an elementary character and did not last long, General Treuille de Beaulieu having sounded the "Cease firing" at 11 o'clock in the forenoon. This year the interest chiefly centred in the position of the field hospital. It is feared, and not without good reason, that when the most complete treatment is not immediately available a great many unnecessary deaths must take place during and after an engagement, for naturally the resources of the surgeons who have to administer first aid are limited. The object on the present occasion accordingly was to instal a fully equipped field hospital as close as was practicable to the field of battle, and, theoretically speaking, the results were excellent. A number of dressing stations were quickly organised, and the "wounded men," each of whom was distinguished by a badge whereupon was inscribed the nature of his injury, having received suitable preliminary treatment, were carried on stretchers in the first instance to an ambulance where they were further attended to, and thence, if their cases demanded it, to the field hospital, a very light litter of new pattern on wheels being successfully employed during the latter stage of the journey. For the accommodation of the field hospital a rural restaurant was utilised, the various arbours, grottoes, &c., being transformed into special wards. These bowers, destined for Parisian pic-nic parties, each had a rustic name, which did not at all correspond with the technical labels that were fixed alongside of them. As soon as darkness set in a new lamp, the invention of Dr. Mareschal, was essayed, and by its aid writing could be deciphered at a distance of 100 metres. The manœuvres were attended by a great number of medical and other officers belonging to the territorial army and the reserve, as well as by Inspector-General Dujardin-Beaumetz, Deputy-Inspector-General Dieu and Deputy-Inspector-General Chauvel.

The Nile Campaign.

We have heard uncommonly little of late from the Nile expeditionary force. The Sirdar, Sir H. Kitchener, maintains a studied reticence in regard to his intentions and movements. It is rumoured that the Khedive and the Sirdar are desirous that whatever military operations are designed should be undertaken by the Egyptian army, whereas many influential persons, whilst fully recognising the immense improvement which has taken place in that army, are of opinion that in the event of any unforeseen occurrence or reverse the Egyptian force should be backed by British troops. General Sir Francis Grenfell is now in Egypt, but it seems unlikely that he will take any active part in the advance and future field operations of the expedition. Be this as it may, the troops comprising the Nile force are, we are glad to say, healthy. Five newspaper correspondents are about to leave that force and cross the desert to Suakim, so it does not appear that any military move from Berber is imminent at present.

An Unfortunate Regiment.

The serious outbreak of cholera amongst the 1st Battalion Shropshire Regiment stationed at Sitapur shows, we understand, some signs of abating. It would seem that this regiment is fated to be pursued by the fell hand of disease, for not only have their ranks been thinned in India, but also in Malta, Egypt, and Hong-Kong. At the last-named place they were attacked by the bubonic plague while engaged in the sanitary work of cleansing infected dwellings.

The *Army and Navy Gazette* says:—"By a curious coincidence, at a time when the deficiency of instruction in tropical medicine provided by the navy for its medical officers is being pointed out, notification is made of the approval by their lordships of extensive additions to the Naval Hospital at Haslar. These will include a new zymotic hospital. The surgeons under instruction and the nursing staff are to be provided with quarters, to be erected in the vicinity of the hospital building. A new laboratory for the instruction of surgeons on entry and for bacteriological research in connexion with cases under treatment has been approved of, as well as additions to the present crowded storehouse. There is also to be a new operating theatre and improved accommodation for patients under observation for mental disease."

Correspondence.

"Audi alteram partem."

THE HOSPITALS, THE PROFESSION, AND THE PUBLIC.

To the Editors of THE LANCET.

SIRS,—The first leading article in THE LANCET of Oct. 30th raises an important point in the ethics of modern journalism: How far is the editor of a newspaper, and especially of a scientific journal, justified in making an attack upon the speech of a public man which he does not report at length? How far, too, is it proper to publish, as you do, a strong protest against the supposed views of the speaker by another speaker at the same meeting without publishing the repudiation of the views imputed to him by the speaker attacked; and how far is it justifiable to publish a letter giving at length the impressions of an anonymous writer as to what the speaker said, and then, without further evidence, to attack the speaker and hold him up to professional condemnation for statements which, in fact, he never made? Had you given a full report of my speech, which any of your readers may see if he will turn to the *British Medical Journal*, p. 1274 *et seq*, for Oct 30th, where he will find such a report, I beg leave to say, having a high appreciation from long association of your integrity and honour, that the article in question would never have appeared in the columns of THE LANCET. Circumstances having placed me in a position of authority in regard to certain questions of the first importance to the medical profession and the public—a position thoroughly acquiesced in and endorsed by THE LANCET—I have found it necessary for some years, as a matter of precaution, to have my remarks in public taken down in shorthand, so that my actual words may be forthcoming if and when challenged. I enclose you a transcript of the shorthand writer's notes of my remarks, which, in justice to THE LANCET and myself, you may like to publish.

As you regard my views as so important it may be well that I should now place them on record in your columns. They are briefly:

1. That eleemosynary medical attendance should be abolished as far as possible.

2. That hospital letters should cease to be issued in exchange for monetary contributions by hospital supporters.

3. That no patient should be admitted to the hospitals, except in cases of medical urgency or accident, without due inquiry by a qualified registration officer or almoner into the circumstances of the applicant, so as to secure that no one should receive free medical relief who was not a fit object of charity.

4. That where possible voluntary hospitals should have two sets of buildings, one set to be devoted entirely to the reception and treatment of free in- and out-patients by the medical staff attached to the hospital, and the other constituting a paying annexe (where necessary on a provident basis) to which in- and out-patients should be admitted who can afford to pay something for their medical treatment up to a fixed limit of capacity to pay, and where the in-patients can be attended, if they desire it, by their own medical men, and where the out-patient work shall be done under the direction of the medical staff with the assistance of medical officers selected from general practitioners. This arrangement would give the general practitioner in towns the advantages of hospital practice which the cottage hospitals have conferred upon his colleagues throughout the country. The whole of the patient's payments to be pooled and a certain percentage of them set aside to defray the cost of the medical attendance upon the patients in the provident annexe.

5. I am opposed to the registration fee system, which, as

the late Mr. Sampson Gamgee showed, tends in practice to exclude the deserving poor, for whom the hospitals are primarily intended, and to admit to treatment the relatively undeserving and prosperous who can pay and ought to be made to pay for their medical treatment when ill.

6. Generally, I desire to see the administration of our hospitals placed upon such a basis that they shall afford the maximum facilities for (*a*) the treatment of the really deserving poor; (*b*) the assistance of the great body of the medical profession by putting at their disposal post-graduate classes, and the adoption of a system by which the general practitioner will be encouraged to send difficult cases for consultative purposes to the hospitals; (*c*) the adoption of measures which will afford guarantees to those who provide the money for the support of hospitals that that money shall be economically administered, and that its expenditure shall be confined to the relief of fit objects of charity; and (*d*) the utilisation of hospitals as medical schools in the best interests of all classes of the people.

These are the principles for which I have worked during thirty years of my life, as my books and public utterances prove. Some may of course think, as you state, that the fact that I am not a registered medical practitioner entitles you to say that these subjects are not my proper study; but I would remind you that not only have I been practically engaged in hospital administration for thirty years, but also that I have long since completed my medical curriculum and have passed all but the final examination; that my schedules are all signed, and that I can become a registered practitioner in a few months, should that step in my judgment tend to help the cause, to the furtherance of which I have devoted all my resources and the best years of my life.

Should you, however, still contend that the principles I hold are such as to render me an unfit associate for medical men on the platform of hospital reform, I may be strongly tempted to pass my final examination, and to challenge you to stand against me at the next election for the General Medical Council, in order to prove whether the principles I advocate, or those which you somewhat nebulously suggest, best represent the opinion of medical men on this subject. I have had too many instances of the appreciation of my humble services in all branches of the medical profession to doubt in such circumstances what that issue would be; but I believe that such a contest is not likely to arise. Our views have been too much in accord to render it possible that any such conflict of opinion should exist. Your article might lead your readers to suppose the contrary, but I now show it to be based upon an entire misapprehension of my speech and views. Finally, I may say it is not my desire or intention to try experiments "on our great hospitals and our great profession," but to render them of the greatest service to each other. I am, Sirs, your obedient servant,

HENRY C. BURDETT.

The Lodge, Porchester-square, W., Nov. 1st, 1897.

*** The *British Medical Journal* reported Sir Henry Burdett as having said:—

"Could any hospital physician or surgeon who saw the cases at the hospitals deny that a very great number of cases came to them at a later period of their disease which were in a condition they ought not to be in if they had had adequate medical treatment from the general practitioner? He thought the cause of so large a number of people flocking to the hospitals was due to a want of full utilisation of the opportunities which hospitals offered not only to the public, but to the medical profession, and that they must go really into the question of the treatment of the patients outside as well as inside the hospitals if they wanted to get the question really faced."

If these words do not distinctly charge the general practitioner with incompetence we fail to see what meaning they have. As to the repudiation we disregarded it because it was no real repudiation. We print it now from the shorthand writer's notes supplied by Sir Henry Burdett.

"All I wanted to bring out is this, that as a matter of fact in the enormous body of men in general practice, especially among the class of men these out-patients go to when they do not attend the hospitals, there are a large number who would be infinitely helped both as to their practice and reputation if they would go to the hospitals and attend post-graduate classes."

What is this but a repetition of his charge—a charge that cannot fail to damage the general practitioner in the eyes of the public? We do not believe that journalistic ethics, ancient or modern, oblige us to report Sir Henry Burdett's public utterances in full, while we stand by the sentiments expressed in our leading article.—ED. L.

"BERI-BERI AND ERRONEOUS DIAGNOSES."

To the Editors of THE LANCET.

SIRS,—In the interests of tropical medicine I desire to give my experience during my first voyage on the Peninsular and Oriental Steam Navigation Company, though the facts do not tend to throw credit on my diagnostic acumen. During the voyage a lascar came to me complaining of shortness of breath and swelling of the legs. On examination I found the œdema was not limited to the legs but extended also to the back and chest. The patient was also very anæmic. The heart was slightly dilated and the first sound was reduplicated. The lungs showed extensive emphysema, and as I found no evidence of kidney disease either in the examination of the urine or by the symptoms I concluded the œdema was entirely symptomatic of this disease, and treated the case accordingly. The symptoms and signs fluctuated from time to time, nausea and vomiting occurring occasionally, and bronchitis eventually supervening. Suffice it to say, that the patient succumbed during an attack of extreme dyspnœa. The cause of death I certified as being due to emphysema and bronchitis, never for a moment doubting the accuracy of my diagnosis. The text-book of medicine that I took with me was the well-known work of Dr. Frederick Taylor (second edition, 1891). Now the only mention in this work of beri-beri is contained in two short lines, which run thus: "Multiple neuritis also forms a part of leprosy and of the endemic disease of Japan, kak-ké or beri-beri." Taking together the fact of this altogether insufficient description and my previous clinical inexperience of the disease I feel that my error was not altogether unpardonable. Since that time, however, I have read the subject of beri-beri carefully and have also had the opportunity of seeing several cases. I have come to the conclusion that the case I have recorded was a typical case of the disease, and had I had the slightest knowledge concerning it I should have escaped making at least one erroneous diagnosis. I may say that my case is by no means an isolated one, many of a like nature having occurred to my knowledge. I can therefore fully endorse Dr. Patrick Manson's statements as to erroneous diagnosis. I consider it would be to the interest of all concerned should large companies such as the Peninsular and Oriental Steam Navigation Company make a fixed rule not to employ any medical man who could not produce evidence of having attended a course of lectures on tropical medicine.

I am, Sirs, yours faithfully,

WILLIAM BRYCE ORME, M.R.C.S. Eng.,
Late Surgeon P. and O. Steam Navigation Company.

Nov. 2nd, 1897.

To the Editors of THE LANCET.

SIRS,—*Apropos* of Dr. Curnow's letter in THE LANCET of Oct. 30th, my own experience as regards errors in the diagnosis of beri-beri quite coincides with his. Perhaps I may be permitted to cite an amusing instance from my own personal experience. In the year 1887 I was stationed in Hong-kong, and after a residence of a few months in the colony was placed in charge of the Civil Hospital for a short time pending the arrival of a newly appointed civil surgeon. A few days after I took over charge of the hospital a Chinaman was admitted suffering from what I diagnosed as locomotor ataxia; I thought some of the symptoms were anomalous, but on the whole was satisfied with my diagnosis. A few days later I was hastily summoned to find the patient (whom I had seen fairly well the same morning) sitting up in bed, and with suffused face and starting eyes gasping for breath; I had scarcely reached his bedside when he fell back dead. The necropsy showed only dilated heart. I attributed his death primarily to locomotor ataxia and more immediately to paralysis of the right heart. Next morning the old Chinese ward-master, who had worked in the hospital for seventeen years, placed the blank death certificate on my desk for signature. As I filled in the words locomotor ataxia his impassive face lighted up, and with the engaging candour of the Celestial employé he whispered in his

pidgin English, "*My* tink that peecee man die of beri-beri." In a flash I knew he was right, though, needless to say, I rebuked him for his freedom with portentous gravity.

My medical education had been no better and no worse than that of other young medical men; but at that moment and on many other occasions I had every reason to regret it had not been better. The present movement in favour of special instruction in tropical medicine is one with which every medical officer who has served abroad will be in hearty sympathy. Instances of mistaken diagnosis such as the above are innumerable, and it appears to me to be the duty of the leaders of the profession to take steps to remedy a crying need.—I am, Sirs, yours faithfully,

M. T. YARR,
Surgeon-Captain, A.M.S.

Marlborough Mansions, S.W., Nov. 2nd, 1897.

"PROPOSED AMENDMENTS OF THE NOTIFICATION ACT."

To the Editors of THE LANCET.

SIRS,—I notice in THE LANCET of Oct. 30th a criticism of a report I made to the Crewe Town Council on the above subject, and I beg to thank you for it and to acknowledge its fairness. I shall be glad, however, if you will allow me a few words of self-justification. The first point you raise is one which was modified in the memorial to the Local Government Board which was passed under the seal of this council on the 28th ult. The recommendation now reads:—

"That as one notification brings the infected premises to the notice of the medical officer of health subsequent cases of the same disease occurring in members of the same family resident in the same house, within twenty-eight days of the date of such first notification and notified by the same practitioner should be paid for at a reduced fee of 1*s.* for each case, the fee for any disease included in the Schedule of this Act other than that previously notified or for any case notified by any other practitioner to be paid for at the usual rate of 2*s.* 6*d.* per case."

I am prepared after careful consideration to stand by that as a reasonable and fair arrangement. Naturally, medical practitioners would rebel at this, but as a medical officer of health I have (to say the least) a bias towards the care of the public purse.

With reference to the second point (payment of 1*s.* as fee for notification of the milder infectious diseases) I am afraid your critic takes a wrong view of the matter. The local authority do not pay the medical practitioner for his *diagnosis*—he diagnoses the case for his *own* ends and for the satisfaction of his patient. The local authority ask him when he has made his diagnosis for these ends to acquaint them, in certain specified cases, on a form which they provide for the purpose. Medical officers of health everywhere, I venture to think, know what their reply would be if they endeavoured to persuade their local authorities to include as notifiable diseases, for which a fee of 2*s.* 6*d.* per case would have to be paid, chicken-pox, measles, whooping-cough, &c. There would in 99 per cent. of the cases be absolutely no hope of support, for the local authorities would say, "Is the information as to the existence of these milder diseases of such great value to us at present as that of small-pox, scarlet fever, or typhoid fever? No; then we think we ought not to pay so much for the information." But if we ask them to include the milder diseases at a lower fee, then there is much more hope of their giving in and the medical practitioners would benefit correspondingly.

In short, Sirs, to be perfectly plain, the medical practitioner's views of the matter are necessarily selfish and they are obviously, I think, the views of your critic; the views of the medical officer of health are for the greater part unselfish and are necessarily in conflict with those of private practitioners. There are cases (and it appears to me that this is one) in which the medical officer of health is sorely divided between his duty to his local authority and that to his medical brethren. I have endeavoured to be fair to both, and I feel confident that my brethren who are public officials will see pretty much as I do. In case you care to see it I enclose a copy of the actual memorial which has been sent to the Local Government Board by my town council, and when I tell you that this town council were strongly opposed to the Notification Act for many years and only adopted it on the repeated strong representations of my predecessor, Dr. Herbert Jones, in October, 1896 (exactly one year ago), I think you will admit that Crewe are by their recent action upholding their municipal motto, "Never Behind." I thank you, Sirs, for your anticipated insertion of this letter, and I repeat my thanks for your straightforward criticism.

I am, Sirs, yours faithfully,
MEREDITH YOUNG, M.D. Edin., D.P.H. Vict.,
Medical Officer of Health.

Health Department, Municipal Offices, Earle-street, Crewe, Nov. 2nd, 1897.

A DISCLAIMER.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to say through your journal that I am no relation of, or in any way connected with, the man convicted of fraud at the Central Criminal Court on Oct. 29th, 1897, under the name of Theophilus Turner and described as passing as a surgeon? Theophilus was not his name at all—only one of his many aliases. I beg to say that I am the only Theophilus Bryett Turner in the Medical Register, and was very much surprised that I was not put into the witness-box to state this fact and so protect myself. Apologising for troubling you, I am, Sirs, yours faithfully,

T. B. TURNER.

"Coniston," 7, Warminster-road, South Norwood-park, Nov. 3rd, 1897.

*** We sympathise with Mr. Turner, and beg to add a protest against the loose way in which every scamp who dabbles in drugs or bone-setting to the detriment of the public health is always described on reaching the dock as a "doctor, a "surgeon," or a "medical man."—ED. L.

THE PATHOLOGY OF THE PERNICIOUS MALARIAL FEVERS.

To the Editors of THE LANCET.

SIRS,—In your report of my remarks in the discussion on Dr. Thin's paper at the meeting of the Royal Medical and Chirurgical Society on Tuesday last, I am represented as having spoken of typho-malarial fever, whereas I spoke of the æstivo-autumnal, or irregular, fever of malaria. Dr. Thin's subject was the Pathology of the Pernicious Malarial Fevers, and typho-malarial fever is not one of them.

I am, Sirs, yours truly,
J. ANDERSON.

Nov. 2nd, 1897.

THE LONDON FREE HORSE AMBULANCE SERVICE.

To the Editors of THE LANCET.

SIRS,—Will you kindly aid me in making it known to the profession that in the north, south, and south-west districts of London horse ambulances are stationed and are always available without charge for the vehicle for any case of accident or of disease which is not contagious. The costs, which in the absence of any fund have to be paid by the applicant, come in all to 7*s.*, with cab rate of increase if for over two miles. These are for the horse, 5*s.*, cleaning 1*s.*, driver 1*s.* As private ambulance carriages cost a minimum of 25*s.* to 42*s.*, this provision by the London Horse Ambulance Society will be seen to be of great help to such as are in need of it.

That this need exists has been curiously but fully demonstrated in the history of the organisation. From the time of its completion, and during my absence from England, not a single public announcement, I am told, has been made of its existence yet from an official report from each station kindly supplied to me by Sir Edward Bradford, Chief Commissioner of the Metropolitan Police, it will be seen that whereas in 1884 when the society was organised under the auspices of H.R.H. the Duke of Cambridge the carriages were used by only fourteen persons, in 1895 this number had steadily increased to one hundred and nineteen for that year and in all to nearly five hundred. On a recent inspection in detail I found each carriage to be exquisitely clean, in perfect order and in readiness to start at a moment's notice. At all the stations I found the interest displayed by the police officers in the successful use of these vehicles amounted to enthusiasm, fairly reflecting the admirable spirit of the Chief Commissioner to whose kindly coöperation the good that has been accomplished is so largely due.

The way to obtain one of these carriages is very easy. Anywhere within the metropolitan area any person desiring one has simply to state his wishes at the nearest police

station. The officer in charge at once telegraphs free of cost and the nearest carriage which is disengaged is sent direct to the spot where it is required on the conditions I have named. It is with much gratitude I am able to state that after careful investigation I have been unable to discover that there has been a single complaint during the thirteen years this organisation has been in operation.

I am, Sirs, yours faithfully,

Nov. 1st, 1897. B. HOWARD, M.D., F.R.C.S.Edin.

A HINT.

To the Editors of THE LANCET.

SIRS,—May I through the columns of THE LANCET ask the medical faculty when sending patients to the Riviera to communicate when possible first with some practitioner abroad with reference to the most suitable hotel for each case? Patients usually on arriving go direct to some hotel which they have heard recommended, often the most unsuitable, however, for them, and afterwards send for a medical man. The bronchitic may thus choose a proverbially cold hotel, the neurasthenic a particularly noisy one, and so on. It is a delicate task for the medical man to remove his patient to a more suitable hotel without straining his relations with the hotel manager who suffers, and the patient is liable to think that the trouble of re packing and moving might have been avoided by a little forethought on the part of his medical adviser before he left England. I venture to call attention to this point as it is often a matter of considerable importance to all concerned.

I am, Sirs, your obedient servant.

Mentone, Oct. 30th, 1897. D. W. S.

"THE HEALTH OF THE NAVY."

To the Editors of THE LANCET.

SIRS,—In reference to the annotation on the Health of the Navy in THE LANCET of Oct. 30th I would suggest, instead of reverting to the old plan of issuing the annual report, in which a few selected cases were included amongst a mass of statistics, that a Naval Medical Annual, separate from the present Statistical Report and compiled from the journals of the naval medical officers, be issued at a reasonable price, say 6s. The publication would be self-supporting, for practically every medical officer would subscribe to it, and especially if the subjects of tropical diseases and the hygiene of places visited by Her Majesty's ships be made features of the book a large number of medical men in the colonies and also at home would support it. If papers on the collateral sciences were included in the volume a great stimulus would thus be given to original research. The book would be rendered more valuable if it was illustrated with photographs and drawings and included extracts and translations from the *Archives de Médecine Navale et Coloniale* and other British and foreign journals bearing on the medical service of the navy.

I am, Sirs, yours faithfully,

Nov. 2nd, 1897. R N.

HOSPITAL ABUSE: A SUGGESTION.

To the Editors of THE LANCET.

SIRS,—Will you find space for the following suggestion in the columns of THE LANCET, where it may be subjected to the criticisms of the profession? It is that any person desiring to be treated at a hospital or other institution supported by voluntary contributions, except in cases of emergency, must produce a certificate of fitness signed by a registered medical practitioner. The objects of this proposal are obvious enough; I need not do more than capitulate them. (1) To prevent simple cases from going to the out-patient and casualty departments; (2) to prevent abuse of charities by persons able to pay; (3) to enable general practitioners to obtain quickly and easily special opinion in obscure cases amongst the poor; (4) to spare patients much weary waiting in halls and corridors—delay when they are ill and waste of time when they are not; (5) to give general practitioners opportunities of examining and taking notes upon cases which, owing to their singularity, are otherwise taken at once to hospitals; (6) to foster harmonious relations between general practitioners and hospital staffs; (7) to enable fuller family histories and histories of present disease to be obtained and to facilitate the tracing of cases after operation, &c.; (8) all which would redound to the benefit of patients; and (9) to give general practitioners more paid work to do.

The objections that I foresee will be raised are that general practitioners will take advantage of the powers given them to extract fees from the poor. To which I reply that no man can be treated against his will, and that any medical man who tried to do this systematically would soon be found out by the poor of his district. Another objection is that consultants would loose by it. Well, consultants are already in the hands of the general practitioner and have not suffered much. And also the general practitioner's certificate would only entitle a patient to treatment subject to the approval of the receiving officer of the hospital. At present there is much friction between general practitioners and hospitals because we find that our interesting cases gravitate to the hospitals, where we lose sight of them, for the patients are ashamed to tell us and the hospital authorities have no time.

The certificates might run thus:—

1. "I am of opinion that —— —— is a fit and proper person to receive medical (or surgical) treatment at a charitable institution.

(Signed) "——.

2. "I shall be glad of the opinion of a member of the medical (or surgical) staff of ——— Hospital upon the case of ——.

(Signed) "——.

"Remarks on case ....."

There can be no doubt that this would add considerably to the amount of unpaid work that we do, as of course no medical man would charge for signing these certificates, but I think it high time that a stop be put to the ridiculous paradox of laymen forming committees to teach medical men philanthropy.

I am, Sirs, yours truly,

AN EAST-END DOCTOR.

THE EPIDEMIC OF TYPHOID FEVER AT LYNN.

(FROM OUR SPECIAL COMMISSIONER.)

IF the inhabitants of Lynn are suffering at the present moment from a serious epidemic of typhoid fever it can safely be said that they have but themselves to blame for their misfortunes. They have been warned over and over again. Nor has such warning been confined to mere theoretical dissertations; they have had more than one painful object lesson. What is occurring to-day should be all the less a surprise as a similar epidemic afflicted the town in 1892, and the story of the present epidemic seems to be written on parallel lines with that of five years ago. It appears extraordinary that the town should have waited five years and have thus incurred the heavy responsibility of provoking a second and more severe epidemic. Yet there was no lack of warning. What experience had taught was confirmed by the reports of the Local Government Board, and foretold by such local experts as, for instance, Mr. W. Whitaker, F.R.S., of H.M. Geological Survey. As President of the Norwich Geological Society this gentleman delivered an address so far back as Nov. 6th, 1883, which was fully published and reported at the time. In this address there occurs the following prophetic passage in regard to water-supply: "The enterprise of Wisbech is thus in strong contrast to the apathy, and one may say the stupidity, of the larger town, in which I have the misfortune to live, its Norfolk rival, Lynn, the corporation of which treat the inhabitants to one of the worst supplies that I know of. These guardians of the public health allow a set of chalk springs, some pure, but others contaminated, to mix together and to flow along an open channel of six miles or so as the crow flies, receiving on the way the drainage of a fair tract of country, and at the last, close by the borough boundary, some part of the sewage of the village of Gaywood. Notwithstanding that the evil of this course has been pointed out for years, and constant complaints occur, yet our town councillors, in the multitude of whom there is not wisdom,

have not yet made up their minds to any decided course of action; and a question that really admits of no debate is the subject of apparently endless discussion. Words, not deeds should be the town motto—at least, as far as regards the water-supply."

To these remarks Mr. Whitaker subsequently added: "Since the above paragraph was written the town council of Lynn adopted a scheme for the supply of good water, but I fear in a half-hearted way; at all events, their scheme has been rejected at a meeting of the ratepayers, and I am therefore compelled to transfer the charges above made from the members of the town council to the body of the townsmen, who seem not to be educated up to the pure water pitch. When they have had a serious epidemic perhaps they may acquire more sensible views on this matter."

Thus it will be seen that there were complaints as to the Lynn water-supply previously to 1883. Then nine years later follows a severe epidemic, and even this serious warning had so little effect that new waterworks are only now in course of construction, and the inhabitants are still drinking from the same impure source with which they have for so long been contented. There are thus some 20,000 persons condemned to look upon every drop of water in their houses with suspicion. The census of 1891 set down the population of Lynn at 18,265, but there has been a considerable increase since that date. Lynn is a very ancient town built on the right bank of the Ouse and can be reached by large vessels coming up the Wash. It is not only a seaport town, but a fishing town possessing a hundred or more fishing smacks. Some of the streets are very narrow, many of the houses are so old as to be of interest to the antiquarian, while narrow passages give access to back courts and overcrowded, miserable dwellings that may well be qualified as slums and rookeries. Marsh silt resting on a deep mass of clay forms the ground on which the town is built, and it measures roughly about a mile in length and half a mile in width. The general sanitary conditions are bad, the drainage is defective, and, to make matters worse, the town is water-locked. The sewer outfalls have to be closed except when the tide is up. Under these circumstances a bad water-supply is more than usually dangerous. The conditions likely to create a predisposition to disease are many, and these I hope to describe fully on another occasion. For the moment, however, I will confine myself to the most urgent question, that of the water-supply. The scheme for an improved water-supply, to which Mr. Whitaker alluded in the passage quoted above, had been prepared by Mr. Hawksley, and, according to the law, had to be submitted to a meeting of ratepayers before the sanction of Parliament could be obtained. This meeting was held in 1884, and the ratepayers forthwith vetoed the project. The matter was then dropped and nothing further was done till 1892, when an outbreak of typhoid fever more forcibly attracted public attention to the question of water-supply.

The water comes to-day from the same sources as it did during the last epidemic. No material change has been effected. It is taken from a small river called the Gaywood or Grimston River. It finds its origin in a series of springs that come from the chalk in and around the village of Grimston, some seven miles away. One of these springs arises under the churchyard of Grimston, and the inhabitants of Lynn have been content to drink the water from a cemetery. Of course, there is no accounting for taste, and it often happens that water from cemeteries is, if not wholesome, at least bright and sparkling in appearance. Doubtless, also, it may have a better flavour and be less dangerous than that coming from the privies and manured field with which it is freely mixed lower down. But this Grimston spring, even in dry weather, yields 460,000 gallons daily, and quantity is not infrequently preferred to quality. The best spring, that of Sow Head, yields only 166,000 gallons daily; but that of Well Hall, which, I believe, is also very good, yields 612,000 gallons. It was calculated that these two springs would give, even in the dryest weather, at least 700,000 gallons daily. Had this water been carefully captured at its source and brought to the town in iron mains many lives would have been saved and much sickness prevented. Nor would any injury have been done to the material interests of those who live on the banks of the stream that flows beyond. With the Grimston spring and the many brooklets and other tributary sources there would be water enough in the Gaywood River to satisfy all riparian claims. Nevertheless the springs were not utilised. The water from the Sow Head and the Well Hall springs are allowed to mingle with the water of the Grimston graveyard, and these three sources go to form the Gaywood River. On the banks of this river there are numerous and highly manured market gardens, a number of habitations, and the village of Gaywood. Not only does a part of the drainage from these places find its way into the river, but indirectly it also receives the drainage from the hamlets of Roydon, Bawsey, and Pot-row. Now, it is only after all these impurities have reached the river that we come to the intake for the water-supply of Lynn. This intake is situated within the borough, not at the beginning, but very near to the end of the river; not before the pollution, but after the pollution. In fact, considerable ingenuity seems to have been exercised in securing the most dangerous water that could be found in the neighbourhood; and the sufferers from typhoid fever are even deprived of the satisfaction of attributing their misfortune to the selfish greed of a water company hungering after big dividends. The town of Lynn owns its own water-supply. Then it may be said that the victims will, at all events, be able to revenge themselves upon the Town Council. This solace is, however, also denied them. Of late years, at least, the Town Council has striven hard to get a better water-supply. It is the ratepayers who, by their votes, have rejected scheme after scheme, yet the ratepayers of Lynn should have known better than to thus vote against their own dearest and nearest personal interests. If they would not believe the theories of sanitarians they might at least have admitted the lessons taught by their own experience. They have had the history of the epidemic of 1892-93 set before them. It is sufficiently emphatic in the lessons it conveys.

The compulsory notification of infectious diseases came into force at Lynn on March 1st, 1890, and during that year there were 4 deaths from typhoid fever. In 1891 13 cases of typhoid fever were notified. There had been deaths from typhoid fever during each of the nine preceding years, the total deaths numbering 25 from 1882 to 1890 inclusive, and there had been 75 deaths during the same period from diarrhœa and dysentery. At the end of February, 1892, there were numerous cases of diarrhœa in all parts of the town and among all classes of the community. In all, from January to June, 1892, 226 cases and 16 deaths occurred in 123 houses from what was defined as diarrhœa or fever. Subsequently 135 of these 226 cases were definitely qualified as typhoid fever. Nineteen of these cases occurred at Gaywood—that is, close to, though outside the boundaries of, Lynn. And I have reason for believing that there were many unrecognised cases of typhoid fever, so that the epidemic was in all probability more widespread than is shown by the statistics.

In 1892 there were 2300 water-closets at Lynn and 1600 privies. Out of a total of 66 houses in which there occurred recognised cases of typhoid fever, 33 drained into privies and 33 into water-closets. Thus, though the privy-houses are less numerous, they gave an equal number of cases; therefore it would seem as if privies constituted a predisposing factor. Further, it was noticed that there were a considerable number of cases of fever in the houses that drained into the dock culvert, which has its outfall closed for six hours at spring tides and for four hours at neap tides. Thus the sewage is here dammed up for several hours every day and makes deposits, and the sewer air is forced up into the streets and houses, and according to views which are now very generally held would constitute another predisposing cause. But the epidemic was so generally distributed throughout the town that, though certain predisposing circumstances accentuated its incidence in various localities, still it was evident that the epidemic was due to one distributing medium—in other words, to the water-supply, and what occurred in 1892 has again repeated itself to-day. The only difference is that the effects are worse now than they were five years ago, for the number of notified cases already amounted on Tuesday morning to 297.

(To be continued.)

COUNTY NURSING INSTITUTION FOR DORSETSHIRE.—A largely-attended county meeting was held at Dorchester recently under the presidency of Lord Digby to consider the proposed formation of a County Nursing Institution, towards which the Earl of Ilchester (Lord-Lieutenant of Dorsetshire) has promised £500 and an annual donation of £25. A committee was appointed to draw up a provisional scheme.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Corporate Supply of Diphtheria Antitoxin.

A CIRCULAR has been sent to the local practitioners from the medical officer of health's department intimating that a supply of antitoxin for the treatment of diphtheria has been provided by the Hospitals Committee at each of the five city hospitals, which can be obtained on application to the resident medical officer or matron at one or other of the said hospitals. The object which the Hospitals Committee have in view is primarily to supply antitoxin for use among the poorer class of patients; and under any circumstances the committee will be obliged if a return showing the progress of the case be made upon a form which will be supplied at the respective hospitals. This is a step in the right direction and indicates the desire of the municipal authorities to afford every facility for the reduction of infectious diseases and for placing all classes of the community under the most favourable conditions towards recovery.

Entries at University College, Liverpool.

Fifty-seven students have entered for the full medical curriculum. Eleven have joined for special courses and eleven for a dental course. Twenty-four have joined classes for preliminary instruction, making a total of 103, or 79 excluding those who have entered for the preliminary scientific course.

The Birkenhead Coroner.

Mr. Henry Churton, the octogenarian coroner of Birkenhead, has written to the town clerk intimating that owing to age and ill-health he has asked his deputy to take the Birkenhead inquests for him. The matter was warmly discussed at the recent special meeting of the Birkenhead town council, when the question arose as to the expediency of a coroner when incapacitated by age or infirmity deputing his duties to another. Upon certain members of the council suggesting a reduction of the coroner's salary it was pointed out by Alderman Deakin that although the Council had the power to fix the salary on appointment they had now no power to reduce it. Mr. Churton recently resigned the coronership of West Cheshire, which he held for upwards of fifty years, Birkenhead being included in that division of the county until it was created a borough, when Mr. Churton was appointed its first coroner. A perusal of the Coroners Act, 1892, Chapter 56, makes it doubtful whether a coroner has power to depute his work permanently to another person.

Suicide of Mr. Richard H. D. Johnson.

Mr. R. H. D. Johnson, who formerly enjoyed a moderate practice in Liverpool, but latterly practised in Birkenhead, committed suicide on Oct. 28th under very distressing circumstances. The deceased attended at the Liverpool Police-court on that date in answer to a summons issued on the part of his wife for non-payment of arrears due for her maintenance. The case was fully investigated by two city magistrates, who did their utmost to smooth matters over between the husband and wife. Their praiseworthy efforts at reconciliation proved ineffectual, as Mr. Johnson said he could not or would not pay the amount claimed. Under the circumstances the magistrates had no option but to inflict a legal penalty, which was one of two months' imprisonment in default of payment, which amounted to £142 odd. The deceased had previously suffered short terms of imprisonment for similar defaults. He was being removed to the cells in a very depressed condition, and on his way down the corridor asked the police attendant to allow him to retire as he had pains in his bowels. The request was unsuspectingly assented to by the attendant. After the lapse of a few minutes the deceased came out of the lavatory with a bottle in his hand, and addressing the police constable said, "Officer, take hold of me; I am done." He was about to fall and expired in a few moments. It was afterwards discovered that the bottle contained prussic acid, an ounce of which was sold to him by a druggist on the previous Tuesday. A verdict of suicide whilst temporarily deranged was returned by a coroner's jury. The deceased was about sixty-five years of age.

Death of Mr. William Joseph Ireland.

Mr. William Joseph Ireland died at his residence in Breckroad, where he had practised for some years, on the 22nd ult.

Nov. 3rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Morison Lectures.

THE first of a series of lectures on the Anatomy and Physiology of the Nervous Mechanism of the Viscera in connexion with the above lectureship was delivered by Dr. Alexander Morison at the Royal College of Physicians of Edinburgh on Nov. 1st. The lecturer discussed the methods employed by histologists in investigating the peripheral nervous system, and examined and demonstrated by microscopic preparations and lantern slides the innervation of (1) the secretory cell; (2) of the cell of involuntary muscle; and (3) of blood-vessels, especially in relation to excretion. These anatomical and physiological lectures are preliminary to a consideration of the part played by the nervous system in diseases and disorders of the viscera.

Royal Medical Society, Edinburgh.

At the meeting of this society on Oct. 29th the following were elected annual presidents: Dr. T. A. Ross, Dr. Ernest E. Porritt, Dr. H. S. Ballantyne, and Dr. George L. Chiene.

The New Pavilion for the Edinburgh Royal Infirmary.

The new pavilion, the plans for which have just been passed by the Dean of Guild Court, is expected to cost in all £40,000. It is to be situated upon the ground acquired some time ago by the managers from the directors of the Sick Children's Hospital, so that it will lie immediately to the west of the existing medical pavilions. The pavilion, excluding two four-roomed houses in the basement, will accommodate 97 persons. In its construction it is to be practically fire-proof, the floors will be constructed of iron and concrete, without wood joists, while the walls will have a lining of brick, with a space between the brick and the main wall. For purposes of asepsis there will be as little as possible in the way of door-mouldings and cornices, while all corners are to be rounded off. Ventilation is to be carried out by means of electric fans placed in a specially-designed tower. The lighting is to be by electricity. In outward appearance the pavilion will so far as possible resemble the existing ones. Internally it will consist of a basement, entirely above ground, three floors of wards of twenty-two beds each, and an attic floor. The wards are to be used for the treatment of the diseases peculiar to women, and are to be constructed with that object specially in view. In the basement is to be provided the long-wished-for bathing establishment. It will comprise a Turkish bath with three hot rooms, douche baths, needle baths, sulphur and vapour baths, while cooling rooms, attendants' rooms, lavatories, and dressing-rooms will be amply provided for. On the attic floor there are to be fourteen rooms for nurses and nine rooms for servants, besides bathrooms and lavatories.

The Edinburgh Jubilee Memorial Fund.

This fund has reached £20,000, but this is only about one-half of what is required, and another appeal has been sent out to the citizens by the Lord Provost. As the fund is to go to the extension of the Royal Infirmary and to assist the Victoria Jubilee Nursing Association it is hoped that the new appeal may bear abundant fruit.

Professor Macewen and the Western Infirmary, Glasgow.

The interest in the unfortunate conflict between Professor Macewen and the directors of the Western Infirmary continues unabated, but no progress towards a friendly settlement can at present be reported. The general feeling among the public—and it is expressed in all the local newspapers—is that whatever be the strict technicalities of the question Professor Macewen has probably been treated rather arbitrarily, and that in any case it would be a serious loss, and one not to be borne, to the infirmary and, indeed, to the whole of the Glasgow school were he to resign his position on the Infirmary staff. That such a termination of the dispute is possible is generally admitted, and Professor Macewen has intimated that he has received at least one invitation to accept a surgical appointment elsewhere.

The Faculty of Physicians and Surgeons of Glasgow.

The meeting of this Corporation for the election of office-bearers was held on Monday, the 1st inst. Dr. H. C. Cameron was elected President, and Dr. A. L. Kelly, Visitor. For an Examinership in Midwifery Dr. A. Sloan was re-elected. For the Examinership in Medical Jurisprudence Mr. T. Kennedy

Dalziel was re-elected. A contest round which much interest centred was for two vacancies in the managership of the Western Infirmary. The out-going managers, Dr. J. B. Russell and Dr. Thomas Lapraik, were opposed by Dr. A. Sloan and Dr. A. Wood Smith. Dr. Russell and Dr. Sloan were elected. Dr. J. D. Maclaren was re-appointed treasurer and Dr. James Finlayson librarian.

Nov. 2nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal Academy of Medicine in Ireland.

THE annual meeting of the Royal Academy of Medicine in Ireland for the election by ballot of the officers for the current session took place at the Royal College of Physicians of Ireland on the 29th ult., when Dr. Edward H. Bennett was elected President, in succession to Dr. James Little, whose term of office had expired. There was no other change of importance. A resolution, proposed by Dr. J. W. Moore and seconded by Sir John Banks, was unanimously passed—"That the Royal Academy of Medicine in Ireland has learned with sorrow of the bereavement of the President of the Medical Section in the unexpected death of his eldest son Lieutenant George Duffey. The Academy desires to convey to Sir George and Lady Duffey an expression of deep sympathy with them in their sorrow and of regret that so promising a career has been so sadly cut short." A similar resolution of condolence was passed by the Royal College of Surgeons in Ireland at its last meeting. Much sympathy is felt with Sir George Duffey, who is most highly esteemed by the members of his profession and by his fellow-citizens.

Royal College of Surgeons in Ireland.

The annual distribution of medals and prizes in connexion with the medical school of the Royal College of Surgeons in Ireland took place in the college hall on the 1st inst. The meeting was largely attended, the visitors including many ladies. Sir William Thomson, in his address inaugurating the medical session, took occasion to review again the claims of the officers of the Army Medical Department for improvements in that service. It will be remembered that the learned president made a most interesting speech on this subject at a recent meeting at St. Vincent's Hospital, when he mentioned that he had himself reason to believe that the Secretary of State for War was favourable to many of the claims of the army medical officers.

Death of the Rev. Professor Haughton, M.D., S.F.T.C.D.

The news of the death of Professor Haughton, of Trinity College, which took place on the 31st ult., was received in Dublin with universal regret. The learned professor was in his seventy-fifth year, but until quite recently he displayed all that wonderful energy and versatility which has rendered his name so widely known and so highly honoured. He graduated as M.D. of the University of Dublin in 1862, in 1866 he was elected a Fellow of the Royal College of Physicians of Ireland, and in 1873 a Fellow of the College of Surgeons in Ireland. After filling with much brilliancy and success many important offices in his College he became a Senior Fellow in 1882. Besides numerous purely scientific distinctions he was the recipient of many honorary degrees, that of D.C.L. Oxon. (Hon. Causâ) in 1863; LL.D. Cantab. (Hon. Causâ) in 1880; LL.D. Edin. (Hon. Causâ) in 1884; M.D. Bonon. (Hon. Causâ) in 1888; Hon. Fellow of the Royal College of Surgeons in Ireland, and of the Swedish Society of Physic.

The Typhoid Fever Epidemic at Ligoniel.

A very interesting report as to the outbreak of typhoid fever at Ligoniel, a village situate at the northern environs of Belfast, has just been presented to the board of guardians by their medical officer of health, Dr. E. C. Bigger, who, with Mr. Milligan, the dispensary medical officer of the district, has made a very careful investigation as to the cause of the outbreak. They turned their attention most carefully to two points—the milk and the water-supply. The milk was found to be supplied by about ten different vendors, several of whom came from a distance, and in only one case had there been any sickness recently amongst the family, and this milk vendor had only supplied milk to one patient. Further, very little milk was taken to the dairies, it being nearly all conveyed direct from the fields where the cows were milked to the consumers, so that the chance of its being contaminated was slight except by the water in which the cans, &c., were washed, so that the milk as a source of the infection was excluded. That there must be some common cause for the epidemic seemed likely from its sudden outbreak, for while for the past few months at Ligoniel there have been cases of typhoid fever, in common with Belfast and other places, there was nothing remarkable in the outbreak until Oct. 18th, when Mr. Milligan, the dispensary medical officer of Ligoniel, who has acted with extreme care and promptness, noticed a great increase in the number of cases attending on visiting lines. He then communicated with the sanitary authorities of the board of guardians, and on the very day he did so he received ten or twelve lines to see cases, every one of which turned out to be typhoid fever, and he considered the situation so grave that he went personally to the executive sanitary officer without waiting for a reply to his letter urging that steps should be taken to check the spread of the disease. It is admitted that the district is most defective in sanitary arrangements, but this would not account for the fact of the almost simultaneous illness of so many people. Further, the cases were more numerous in the upper part of Ligoniel where there is little or no accumulation of filth and sewage, and where there is beautiful clear mountain air. Now in Ligoniel, like Maidstone, there are two main sources of water-supply, besides several wells scattered over the district. One source supplies the upper, and the other the lower part of the village. The upper water rises out of the limestone rock from which it is piped into a large well-built underground reservoir. In this reservoir there is a large manhole, level with the adjacent ground, and it is covered over with a good-fitting, but not water-tight iron lid, and from this reservoir the water is conveyed in iron pipes down to the different fountains where the inhabitants get their supply of water for drinking and domestic purposes. Dr. Bigger, in his report, stated that in the ground above the reservoir he and Mr. Milligan proved by personal inquiry that in a house on the border of the same field there were two patients suffering from typhoid fever. One, a boy, who had been ill for a month, was getting better. His mother said she did not know what was the matter with him as no medical man had seen him. The other was a little girl who was very ill and had probably received the infection from her brother, she having been only a short time ill. Then in a house about thirty yards from this one another patient was suffering from typhoid fever. He had been ill about two weeks and his mother attributed his illness to his being a good deal with the first patient mentioned. Now the latter house was situated on the upper margin of the field wherein was the water reservoir, from which it was distant about 120 yards. All the excreta were thrown out at the back and side of the house—that is, into the same field as the reservoir, towards which there was a steep fall; and passing in front of the house there was a stream into which slops were thrown and in which soiled clothes were washed. This stream then passed along the side of a potato patch into the field, over which it flowed in the direction of the head of the spring and reservoir. Where this spring entered the field it was impassable, owing to the bogginess of the ground, but it only went a short distance down the field till it disappeared, thus showing the porous nature of the soil. This was about sixty or seventy yards above the spring which was the origin of the upper water-supply of the village. Both Dr. Bigger and Mr. Milligan think this is the probable cause of the outbreak, which may have occurred in any of the following ways. By the heavy rain which occurred two or three weeks ago washing the excreta from the back of this house and the stream directly into the reservoir through the sides of the lid of the manhole; or by the excreta and moisture from the stream being carried on the feet of the cows on to this iron lid and then being washed through the sides of the lid into the reservoir; or, what is even more probable, by the water percolating through the soil till it came to the rock which is limestone and over the surface of it till it came to the head of the spring, or through a crevice in the limestone into the spring. Up to Oct. 25th sixty cases had occurred in Ligoniel. On Oct. 23rd a sample of water was taken from three of the fountains and sent for bacteriological examination to Dr. Lorrain Smith, of Queen's College, Belfast, and after a most careful and exhaustive research in the pathological laboratory of Queen's College he has found the bacillus of typhoid fever and obtained pure cultures of it with its usual reactions, the

most recent of Widal's serum test being clearly demonstrated. This epidemic at Ligoniel is of the greatest scientific importance, both from a medical and public health point of view. (1) In a village almost simultaneously a number of people are attacked by typhoid fever in a part of the district with a high altitude and not in a bad sanitary condition, the one common nexus of the cases being that they drank of the same water-supply, which arose in the limestone rock; (2) there is the discovery of cases of typhoid fever above the origin of this water-supply and the excreta from these patients finding its way by a stream into the origin of the water-supply; and finally (3) there is the discovery of the typhoid bacillus in this water-supply (below this point of contamination) in the water coming from the fountains from which the inhabitants of the upper part of the village evidently became infected. This epidemic proves clearly that typhoid fever is in this instance a water-borne disease, and that if the water-supply had not been contaminated there would have been no outbreak; because in the part of the village supplied by another water, although there have been cases, there has been no such phenomenon as a large number suddenly and simultaneously becoming ill with the disease. The latest report is that the outbreak has not materially abated. There have been over eighty cases, twenty-four new cases having been notified recently.

Inquest at the Cork Lunatic Asylum.

An inquest was recently held at the Cork Lunatic Asylum on an inmate who was found to have several fractured ribs, although no history of injury was forthcoming. The governors very rightly requested the Board of Control to hold a special investigation, and the results of this have now been made public. Dr. E M. Courtney, inspector of lunatics, has reported that the patient was suffering from advanced cerebral disease, and had a peculiar formation of the chest indicating a soft and brittle condition of the bones. This condition was proved to have been present by a microscopical examination made by Dr. Woods, the medical superintendent, who reported that a section of one of the fractured ribs showed an extreme degree of rarefaction of bone tissue, the cancellous spaces being filled with a very vascular and fatty cellular tissue.

Nov. 3rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Pathology and Treatment of Membranous Colitis.

M. BLONDEL recently read an important communication upon the above subject before the Therapeutical Society. According to him membranous colitis is always symptomatic and secondary. Constipation is not invariably sufficient to explain its appearance, for many who suffer from constipation never have colitis and, in addition, in many cases of colitis a prevailing symptom is acute and very painful diarrhœa. Nor is microbial infection a cause, for in the false membranes the only organism found is the bacillus coli communis. If a woman, the subject of pelvic inflammation, be also attacked by membranous colitis, it is not the microbes from the genital organs which infect the intestine for there are never found in it streptococci, staphylococci, or the characteristic gonococci, but on the other hand the existing lymphatic channels permit free passage of the bacillus coli from the intestine to the genital organs, for these bacilli are often found there. M. Blondel drew a parallel between membranous colitis and certain affections of the stomach, the rectum and sigmoid flexure which are the seats of colitis playing the same part as the stomach in that they form a reservoir with walls possessing both secretory and motor functions. In two cases observed by him there were stasis and hypersecretion accompanied sometimes by painful spasms and sometimes not, according to the type of the complaint. In colitis the hyper-secretion presents itself under a special form—namely, as a membrane—for the poured-out mucus coagulates after a little time owing to the acidity of the intestinal contents and the dehydration which occurs from the mucus remaining for some time in absorbent surroundings. M. Blondel made most of his observations on membranous colitis in women, in whom this disease is very frequent. He considers that there are two classes of causation—direct and indirect. In both classes there is a trophoneurosis both secretory and motor, due to the action of the sympathetic abdominal plexus which is excited by a reflex irritation. The indirect causes comprise all sorts of visceral ptoses which drag on the sympathetic nerves and so irritate the plexus, and the most commonly observed of these is nephroptosis, although both enteroptosis and gastroptosis act in the same way. To these must be added prolapsus of the genital organs in women; particularly retroversion of the uterus, for when this condition is present the uterus drags on the broad ligaments and their nerves and so irritates the distant plexus. It is owing to the stretching of these ligaments that pregnancy is observed as a cause of colitis about the third month, when the uterus ascends out of the true pelvis. The direct causes are the various tumours which compress the bowel and so hinder its free peristalsis, and, lastly, bands and adhesions due to old pelvic peritonitis, which knot up the coils of bowel. This is the most frequent cause of colitis in women and explains its rarity in men, for in them pelvic peritonitis is very uncommon. M. Blondel recounted many instances where the destruction of these bands, either by laparotomy or massage, had brought about the cure of a most persistent colitis. Treatment, he said, must be symptomatic, and it comprises the removal of the causes by rectifying visceral and genital ptoses and the liberation of the intestine from whatever interferes with its functions or compresses it. As to local treatment he recommended the use of large injections of a warm solution of bicarbonate of soda, strength 20 per 1000, or, still more, an injection of a 5 per cent. solution of ichthyol, which had yielded excellent results.

Responsibility for Surgical Operations.

Another remarkable case involving questions of practical surgery has just come before the law courts, but this time there is no death to be deplored. A bicyclist had been run over in the street by a vehicle. When carried to the hospital he was found to have sustained a fracture of the arm which was put up by the surgeon in charge, M. Théophile Anger. In the course of the evening the patient complained of great abdominal pain, suffered from vomiting and syncope, and presented alarming peritoneal symptoms. A surgeon having been sent for M. Hartmann saw the case, diagnosed internal hæmorrhage, and performed laparotomy. He removed from the abdomen a considerable quantity of clot and tied two mesenteric vessels which were bleeding freely. The patient made a good recovery, but as he had remained a long time in the hospital the person who had caused the accident, in order to obtain a reduction in the amount of compensation payable, argued that the laparotomy was unnecessary and that this was the sole cause of the patient's remaining so long in the hospital. M. Anger has just given evidence in favour of this strange claim before the tribunal, and said that the young surgeons of to-day are only too ready to open the abdomen. The medical world is not in favour of this evidence.

Difficulties in the Manufacture of the Alkaloids.

M. Huchard has drawn the attention of the Therapeutical Society to certain inconsistencies in the effects produced by theobromine, an alkaloid which according to him is of the most inconstant composition. It varies according to the source from which it is derived and in various cases disastrous results arise from impurities present in it. M. Bardet called attention to the difficulty which exists in France in the manufacture of really pure alkaloids at a price which permits them to compete with the foreign-made articles, more especially those manufactured in Germany. The chief cause is the extremely high price of pure alcohol in France, so that the French manufacturer has to pay 3 francs a litre while the German only pays 30 centimes, and as the evaporation of the alcohol employed as a solvent cannot be carried on at a temperature which allows it to be recovered the manufacturer necessarily suffers considerable loss. The society decided to ask the Government that all alcohols employed in pharmacy should be duty free, without much hope, however, of success, for the trade in the so-called hygienic wines containing coca, kola, &c., which are really alcoholic drinks sold in great quantities at the present day, brings in such a large revenue that it certainly would not be given up except under pressure. As there is scarcely a druggist in France who does not make these nostrums which favour intemperance under the mask of hygiene and health, it is hardly likely that the trade will renounce this lucrative industry even to gain the benefit of being able to sell pure alkaloids, which they could only sell in infinitesimal quantities and at an extremely small profit.

Nov. 1st.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Serum Treatment of Leprosy.

DR. BUZZI, of Berlin, has had the opportunity of attending one of the rare cases of leprosy which happen to come from foreign countries to this city, and he has described it in the *Deutsche Medicinishe Wochenschrift*. The patient was a boy, fifteen years of age, who came from South America in 1891. He showed marked symptoms of maculo-tubercular leprosy, such as hypertrophy of the skin of the forehead, the nose, the cheeks, the chin, and the ear; on his face there were disseminated tubercles of about the size of a pea. Tubercles were also present on the extremities, and the skin, especially of the trunk, was covered with brown pigmented spots. The usual internal and external remedies proved useless. New tubercles were formed and the patient's general state became worse. Injections of Koch's tuberculin performed in 1892 were very injurious, for new eruptions followed and there was suppuration at the places where the injections were made. In 1897, when Dr. Carrasquilla, of Bogota, advocated the serum treatment of leprosy, Dr. Buzzi obtained a supply of the anti-leprosy serum, and from February to June twenty-six injections of from 0·3 c.c. to 3·25 c.c. were given, the whole quantity employed being 42 c.c. The injections were given at first twice a week, then once a week, and afterwards once a fortnight only. The tissues round the place of the injections used to become œdematous; the injections themselves were rather painful, but no suppuration followed. Well-marked collapse ensued twice. Two or three hours after the injection the temperature generally rose and within eight hours reached 39° or 40° C. (102·2° or 104° F.), the commencement of the rise being marked by a rigor. During the night the temperature became normal after free perspiration, but the following day it rose again. The injections were nevertheless continued. Dr. Buzzi observed in the leprous tubercles the same alterations which were described by Dr. Carrasquilla as a sequel of his injections. The tubercles at first became swollen and were then partially absorbed, the hypertrophied tissues of the extremities decreased in size and the skin became smoother, the ulcerations of the palate and uvula healed up and those of the nose improved; the patient's weight also increased from 39½ kilos. to 45½ kilos. (from 87 lb. to 100 lb.). The treatment has now been discontinued for about four months. Some new tubercles which appeared during and after the treatment were spontaneously absorbed. Although it is still uncertain whether the improvement will continue the injections of serum have so far yielded results which are much better than those obtained by any other method of treatment.

Anesin, a Substitute for Cocaine.

In a good many cases the administration of cocaine becomes impossible owing to an idiosyncrasy of the patient. This fact, together with the danger of acute poisoning, has induced Dr. von Vamossy, assistant in the Pharmacological Institute of Budapest, to search for a substitute, and in the *Deutsche Medicinische Wochenschrift* he recommends a compound which in chemical terminology is called trichlorpseudobutyl-alcohol, or aceton-chloroform, whilst its pharmacological name is anesin. The drug itself has been known for a long time, but the difficulty of preparing an aqueous solution has hitherto hindered its practical use. Dr. von Vamossy has, however, succeeded in making a solution which he tried in the first instance on rabbits. He found that a solution of a strength varying from 1 to 2 per cent. when applied for one minute to the cornea of a rabbit produced an anæsthesia lasting from eight to ten minutes, while an application for three minutes caused an anæsthesia of several hours' duration. Subcutaneous injections made the tissues so insensible to pain that the animals endured incisions two or three centimetres (from ¾ in. to 1¼ in.) in depth without uttering cries, and from fifteen to twenty subcutaneous injections produced general anæsthesia. The substance was then tried by several physicians and surgeons who communicated their observations to the author. Professor Froni, who used it in laryngological practice, said that the sensibility of the pharynx and larynx becomes reduced by brushing the mucous membrane, and that the nasal mucosa may easily be made insensitive in this way when operations with the galvano-cautery are to be performed. Dr. Grosz, ophthalmic surgeon, stated that mere dropping of anesin on the conjunctiva was less efficacious than cocaine, but an application continued for one minute produced total superficial anæsthesia. Subcutaneous injection enabled extirpation of the lacrymal gland to be performed without pain. The remedy produces neither mydriasis nor myosis. Dr. Hültl has used it in general surgery, the operations being herniotomy, resection of the mandible, extirpation of carcinoma of the lip, removal of lipoma, extraction of teeth, &c. His opinion is that the application of the drug is very easy; that it acts as an anæsthetic, but only as far as the tissue is permeated by the solution; that the duration of the anæsthesia is equal to that of cocaine; and that no symptoms of poisoning have been observed. In dental practice it was tried by Dr. Bilasko, who found that in 160 extractions of teeth there was no pain at all in 45 cases and only slight pain in 44 cases; whilst in the remaining 71 the pain was somewhat greater. Dr von Vamossy invites medical men to try the new remedy, which, although in some respects less efficacious than cocaine, has undoubtedly some advantages, especially that of absolute freedom from danger.

Immunity against Anthrax.

Dr. Sobernheim, assistant in the hygienic institute of the University of Halle, has published a paper in the *Berliner Klinische Wochenschrift* in which he states that the blood serum of animals immunised after Pasteur's method against virulent cultures of anthrax bacilli as well as that of those which have recovered from a spontaneous infection does not contain any immunising substance. The blood of animals, however, which have been immunised by increasing doses of anthrax cultures for several weeks undergoes certain alterations which make them resistant against anthrax bacilli of strongest virulence. When from 4 c.c. to 10 c.c. of the blood serum were injected into rabbits they survived injections of anthrax culture, which killed other rabbits in from thirty-two to forty hours. This immunity, however, was only a relative one, as the animals died several days afterwards, a fact at variance with the observations of Selass and Marcheux, of the Pasteur Institute, who secured absolute immunity by injections of only 1 c.c. or 2 c.c. The use of serum obtained from sheep which had been immunised against cultures of strongest virulence was also a failure, as no complete immunity could be imparted to rabbits. But the experiments were much more successful in the case of sheep, for all the sheep which were injected with blood serum of immunised animals became immune against infection by the most virulent culture of anthrax bacilli. The only pathological symptom was a transient rise in the temperature and an infiltration round the place of the injections. All the sheep to which the same quantity of anthrax bacilli had been administered without a previous injection of serum died after a few hours. The serum of artificially immunised sheep is therefore a prophylactic against anthrax infection.

Nov. 1st.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Congresses: Medical, Surgical, and Special.

THERE is no keeping pace with Italy's congresses, central and provincial, particularly in the late autumn. I can overtake them only in swallow-fashion, skimming and dipping. The "Congresso della Società Italiana di Medicina Interna" (the eighth of the series) was held at Naples from Oct. 20th to 24th and was chiefly memorable for the theses on "Leukæmia and Pseudo-leukæmia," introduced by Dr. De Renzi and Dr. Marchiafava; on "Chronic Arthritis," introduced by Dr. Fenoglio and Dr. Massalongo; and on the "Cardiac Neuroses," introduced by Dr. Cardarelli and Dr. Silva, the last-named a very important paper, as will appear on its publication in the official "Atti" (proceedings). A feature of these congresses of internal medicine is the "Esposizione" of medicaments and therapeutic appliances annexed to them; and this year's exposition was an improvement on the best of its forerunners. Another and still more comprehensive congress was that held in our University from Oct. 25th to 27th, at which the opening address was delivered by the Senator F. Durante, professor of surgery in the Roman school. "Congresso dell' Ordine dei Medici" (Congress of the Guild of Practitioners) was its title, and an infinite number

of questions relating to the interests of the profession in Italy was raised and discussed by its members. Prominent among these was Dr. Santini's Bill, "Sull' Esercizio Professionale dei Medici Stranieri in Italia." But as its provisions are known to the readers of THE LANCET and as its discussion at the Congress added no new argument in its support to those already adduced (and, let me say, refuted), I content myself with indicating its place on the agenda-paper. Of the special congresses, that of the "Obstetric and Gynæcological Practitioners" closed on Oct. 21st, and that of "Otology and Laryngology," also held here, under the able presidency of Professor Grazzi, and closed on Oct. 30th, need alone be mentioned. The official reports of all these congresses, containing the more memorable papers (with relative discussions) *in extenso*, are now in the press and will see the light at the close of the present or in the course of the ensuing year.

The English-speaking Practitioner in Italy.

A circular has been addressed by the Minister of the Interior (the Marchese di Rudinì, Prime Minister) to the prefects throughout the kingdom. It is neither more nor less than a mandate charging these functionaries to invite all non-Italian dentists to furnish proof that in addition to their home qualifications they possess one from a recognised qualifying body in Italy, failing which these gentlemen are to be held as practising illegally, are therefore to be called upon to desist from practice, and in the event of their being contumacious to be denounced to the judiciary authority.

Oct. 31st.

Obituary.

SURGEON-MAJOR-GENERAL SIR W. A. MACKINNON, K.C.B., F.R.C.S. EDIN., &c.

HONORARY SURGEON TO THE QUEEN, LATE DIRECTOR-GENERAL OF THE ARMY MEDICAL DEPARTMENT.

THE death of Sir William Mackinnon, the late Director-General of the Army Medical Service, on Oct. 28th, at his residence in Evelyn-gardens, S.W., at the age of sixty-seven years, removes a notable personality as well as a distinguished medical officer. The health of Sir William Mackinnon had not for some time past been altogether satisfactory, and especially during the latter part of his service as the head of his department; but he was a man of fine physique and vigorous aspect, and his death must have come as a shock and surprise to his numerous friends. He had occasionally complained of symptoms attributable to kidney trouble and recently of others referable to cardiac affection, with occasional attacks allied to angina; but he was fairly well during the earlier portion of the day of his death, which was at the last sudden and unexpected, pulmonary symptoms having supervened which were partly excited or aggravated by the fog. The late Sir William Mackinnon's record of war service was a long, varied, and distinguished one; he was a strong and very energetic man—a man of action—and always took a leading part in any duty in which he might be engaged. His varied field service in different parts of the world brought him in close and intimate contact with a number of military officers of rank and distinction from the days of Lord Clyde to the present time, with whom he was a general favourite. This was also attributable to his frank and outspoken, but genial manner. He enjoyed a very wide circle of acquaintance and possessed considerable personal interest with the late Commander-in-Chief and other influential people. By temperament he was somewhat impulsive, but that his instincts and impulses were honest and kindly by nature there can be no doubt, otherwise he would not have made so many friends, to whom his loss will be a grief. He was strongly attached to his profession and in his younger days took an active and even ardent part in surgery and in keeping himself *au courant* with all advances in that direction. Sir William Mackinnon was the son of the late Rev. John Mackinnon, of Strath, in the Isle of Skye. He was born on June 27th, 1830, and was educated at Glasgow and Edinburgh Universities, being admitted a Licentiate of the Royal College of Surgeons of Edinburgh in 1851, and elected a Fellow in 1872. Entering the Medical Department of the Army in February, 1853, he served throughout the Eastern Campaign of 1854-55 with the 42nd Highlanders (the Black Watch), including the battles of Alma and Balaclava, in medical charge of the regiment, took part in the expedition to Kertch and Yenikale, in the siege of Sebastopol and the assault of the Redan (Sept. 8th) and in the final fall of the fortress, for which he had the medal with three clasps, the Knighthood of the Legion of Honour, and the Turkish medal. He next saw active service in the Indian Mutiny and in the New Zealand War. He took part as principal medical officer in the second phase of the Ashanti War of 1873-4, when he accompanied the force to Coomassie. In 1879-80 he was principal medical officer in China, obtaining the rank of Surgeon-General in May, 1880; serving in Malta from 1880 to 1882; at the War Office from 1882 to 1888, and at Gibraltar in 1888-9. In 1889 he was appointed to succeed Sir Thomas Crawford as Director-General of the Army Medical Department, resigning that position last year. He had been in receipt of a good service reward from 1885, was made a K.C.B. in 1891, and was appointed Honorary Surgeon to the Queen in February, 1893.

We have been favoured with the following note upon Sir William Mackinnon by one who knew him well: "In Sir William Mackinnon passes away a striking personality. His Highland origin and Celtic temperament furnished him with that enthusiasm for all he was interested in and the impetuosity of character, always anxious for the truth and all that was good, which endeared him to so many and which secured for him throughout his career troops of admiring friends. His mind was simple and sympathetic and his actions transparent in their honesty and good intentions. Usually quiet in demeanour, he would flash with excitement at anything which hinted wrong or injustice of any kind to anybody. For everything belonging to his profession he had the keenest interest and enthusiasm, and most especially for the surgical branch of it. The catalogue of his military career does not mention that in the early part of it he abandoned medicine for a short space to enter as a fighting officer in a Highland regiment, but he soon returned to his old allegiance. Whenever opportunity arose, as it oftentimes did in the course of his extraordinarily long period of active military service in the Crimea, the Indian mutiny, and New Zealand, he never failed to do some good operative surgery. He performed several excisions of the elbow in the last-named country when that operation was just being introduced afresh to surgical notice—so well abreast was he of the time. At the storming of the Gate Pah a characteristic incident occurred. The officers were one by one wounded or killed, and none remained unhurt but Mackinnon. He took command of the men, rushed the Pah, captured it, and in so doing necessarily killed and wounded the New Zealanders. Several of these he afterwards dealt with as a surgeon, being obliged to amputate in some cases limbs where he himself was solely accountable for the damage he was engaged in rectifying. He might have had a V.C. at this time, but chose the C.B. instead—a circumstance he often regretted. At the time of the Ashanti War, under Lord Wolseley, he failed to be nominated for a place in the expedition. Yet without orders, or perhaps against orders, he went to Madeira so as to be as near as practicable to the scene of action, and Sir Anthony Home, the principal medical officer, falling sick, Mackinnon at once started for the Coast, reported himself to Lord Wolseley, who was very glad to welcome him, and accompanied the expedition to Coomassie as its chief medical officer. This gives some notion of his resourceful energy. He was essentially a man of action. He loved his strictly professional duties, but administration and office work were distasteful to him."

A memorial service was held at St. Columba's Church, Pont-street, on Tuesday, at which both the Duke of Cambridge and the Duke of Connaught were represented, while Field Marshall Sir Donald Stewart and Sir Frederick Haines were in the church. On the same day the remains were cremated at Woking, the service being conducted by the Rev. G. Kirkwood, Chaplain to the Forces, and the ashes will be deposited in the family burying-ground at Kilchrist. Her Majesty the Queen sent the following gracious message to Sir William Mackinnon's family: "Please convey to the relatives of the late Sir William Mackinnon the expression of the Queen's sympathy in their loss sustained by the death of that distinguished officer and member of Her Majesty's Household.'

PROFESSOR MARC OLIVET.

NOT since Moritz Schiff died rather more than a year ago[1] has Swiss medicine sustained a severer loss than that of Dr. Marc André Olivet, Professor of Psychiatry in the University of Geneva. Son of the able Genevese surgeon, M. François Olivet, young Marc André gave early proof of aptitude for the medical career, and after the thorough preliminary education so rigorously exacted in Switzerland he pursued his professional studies in the University of Würzburg, where in 1842, when just in his twenty-first year, he graduated with the "summi in medicinâ honores." Thereafter he proceeded to Lyons and to Paris, and at both seats of learning distinguished himself by his assiduous attendance at the cliniques of their most eminent teachers. It was only after some years thus profitably spent that he embarked on general practice, first at Satigny and afterwards at Geneva. In the latter city his predilection for pure medicine soon asserted itself; he was appointed *médecin en-chef* of the Cantonal Hospital, a post he held for four years, and later accepted the eminently responsible duties of *médecin-en-chef* of the Hospice des Vernets, where he had need of all the tact and the administrative as well as clinical powers with which nature had richly endowed him. He held this position for the thirty-two years between 1856 and 1892 during which the transformation of the Genevese Asile d'Aliénés was passing through its successive phases, and his discharge of the complex and often peculiarly trying *rôle* vouchsafed him was in all respects nothing short of exemplary. From this service his appointment to the supplementary chair of Psychiatry in the University of Geneva was almost a "natural transition," and in due course he succeeded to the post of ordinary professor in the same subject. This was in 1882, and when the Federal law imposing increased stringency on the admission of students of medicine to graduation and practice came into force he was chosen a member of the Directing Committee of Examinations throughout the Confederation. In this capacity he insisted on the candidate's possession of practical knowledge, and it is greatly due to his influence that medicine has made itself so beneficially felt in the aggregate life of the Swiss population, commencing at school and extending to every industrial or mercantile employment, demanding the coöperation of many hands. For the eight years during which he sat on the Administrative Council of Geneva he was the advocate, equally persistent and enlightened, of school hygiene, a subject which interested him deeply even in advancing age and declining health, in so much that he did not disdain the onerous if comparatively humble duties of sanitary inspector of the infant schools of the city.

Dr. Olivet has left a high reputation in medical and particularly in hygienic literature, his monographs and more fugitive publications on hygiene as applied to school-life, to pedagogy, to agriculture and such like, amounting to not a few volumes. "Thorough" is the attribute written large over all these compositions, characteristic as they are of his penetrating insight, sound judgment, and mastery of detail. It is, however, as a clinical observer and teacher that his memory will be most warmly cherished in the Geneva school, where he has left behind a record of acute diagnosis and judicious therapeutics rarely surpassed in the difficult and delicate field of medicine he had made his own. Ill-health withdrew him from professional work about a year ago; but, as is often the case, the unwelcome inactivity thus imposed seemed to assist the malady which it was meant to avert. He died on the 24th ult. in his seventy-sixth year.

JOHN HUGHES, F.R.C.S. ENG., L.S.A., J.P.

MR. JOHN HUGHES died at Penrheol, Barry, on Oct. 27th. Mr. Hughes was born in North Wales in March, 1818, and received his medical education at St. Bartholomew's Hospital, London, taking the M.R.C.S. Eng. and L.S.A. Lond. in 1840, and the F.R.C.S. Eng. in 1858. Mr. Hughes spent the greater portion of his life at Carmarthen, where he was for twenty-five years one of the leading practitioners. He was surgeon to the Carmarthen Infirmary, medical officer of health for the Carmarthen district, surgeon to the prison, and was also a magistrate for the borough. Five years ago on his retirement from practice he removed from Carmarthen to Barry and resided with his son, Mr. J. A. Hughes, the town clerk of Barry. The deceased leaves three daughters and another son, the Rev. Hugh Price Hughes, M.A. Mr. Hughes was beloved by all who knew him, and was held in the highest esteem. Much sympathy is felt for the widow and children, the former of whom is in ill health. The funeral took place at Merthyr Dovan Cemetery on Oct. 30th.

[1] Vide THE LANCET, Oct. 24th, 1896, p. 1198.

ANDREW HINGSTON, M.R.C.S. ENG., L.S.A., J.P.

MR. ANDREW HINGSTON died at Liskeard, Cornwall, on Oct. 21st in his seventy-seventh year. The deceased received his medical education at the London Hospital, and took the qualifications of M.R.C.S. Eng. and L.S.A. in 1842. Mr. Hingston was consulting surgeon to the Liskeard Hospital, and had been medical officer of health of the Liskeard urban district. He was also a Justice of the Peace for Liskeard and about thirty-five years ago was mayor of the borough.

Medical News.

H.R.H. THE PRINCE OF WALES, K.G., has been graciously pleased to accept a copy of the print of the Council of the Royal College of Surgeons of England (1884) as a memento of the Jubilee year.

HIGH SHERIFF OF BRISTOL.—Mr. R. F. Richardson Cross, M.B. Lond., F.R.C.S. Eng., surgeon to the Bristol Eye Hospital, has been nominated for the office of High Sheriff of Bristol for 1897–98.

BRISTOL ROYAL INFIRMARY.—The Bristol Royal Infirmary has recently been benefited to the extent of £20,000. This sum was bequeathed by the late Miss Martha Daubeny to Mr. E. Sampson, of Henbury, for life, but upon his death had to revert to the institution.

TYPHOID FEVER IN CLIFTON.—At the meeting of the Bristol Sanitary Authority, held on Oct. 28th, Dr. D. S. Davies, the medical officer of health, reported that in the week ending Oct. 23rd two cases of typhoid fever were notified in Bristol and sixteen in Clifton, and that two deaths had occurred; the notifications in Clifton from Oct. 23rd to Oct. 28th numbered twenty-five. The inhabitants are recommended to boil all milk before use, as observation of the cases indicated a connexion between the disease and milk-supply. Dr. Davies says there is no reason to suspect the public water-supply.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—A meeting of the town-hall committee of the Cardiff town council was held on Oct. 28th, under the presidency of Alderman Carey, to consider the application made by the University College of South Wales and Monmouthshire for a site for the college and museum in Cathays Park. The chairman stated that the corporation had subscribed £10,000 towards the building fund of the college, and the committee would be prepared to recommend that a site should be provided on condition that the college authorities paid for the land at the same proportion as it would cost the corporation. On the motion of Dr. Buist, seconded by the mayor, it was resolved that a site be granted on the terms mentioned by the chairman.

BOURNEMOUTH MEDICAL SOCIETY.—The annual meeting of this society was held at the Imperial Hotel, Bournemouth, on Oct. 27th, Dr. Roberts Thomson, the retiring President, being in the chair. The report and balance-sheet were taken as read and passed. Dr. Thomson then thanked the members for the honour accorded to him in electing him President during the past year and vacated the chair in favour of the President-elect, Mr. A. G. S. Mahomed. The new President proposed a vote of thanks to Dr. Thomson, which was carried with acclamation. Mr. Heygate Vernon was elected as treasurer, Dr. W. H. L. Marriner as librarian, and Dr. Clift as honorary secretary. The following were elected members of the committee: Dr. Masters, Dr. Marriner, Dr. Muspratt, Dr. Ramsay, and Dr. Duncan. Twenty-five members and three guests sat down to the dinner which followed.

INFIRMARY MEDICAL SUPERINTENDENTS' SOCIETY.—The first meeting of the session was held on Oct. 30th at the St. George's-in-the-East Infirmary. Several matters connected with infirmary administration were discussed. Mr. Burney gave notice that at the next meeting he would move that the society should subscribe to the Royal Medical Benevolent College.

AT a meeting of the British Balneological and Climatological Society (Dr. Snow, of Bournemouth, President), held on the 27th ult. at 20, Hanover-square, Mr. A. H. Haviland proposed, "That the establishment of a chair of Medical Climatology and Geography is desirable." This was seconded by Dr. C. Theodore Williams and carried unanimously. It was then proposed that the subject should be referred to the council, and a committee be formed to consider how best the above resolution should be carried into effect.

DISEASED ANIMALS IN MANCHESTER.—During the year ending Aug. 28th, 1896, there have been four outbreaks of glanders in Manchester. Seven glandered horses have been killed and the carcasses destroyed. At a cowshed at Rusholme, where 35 cows are kept, one became affected with anthrax and died. Four outbreaks of swine-fever have occurred, and the 234 pigs on the different premises were all slaughtered by order of the Board of Agriculture. A special inspection of the cowsheds in the city—112 in number—and also periodical examinations of the milch cows—1182 in number—have been made by the veterinary staff. Of the latter 29 had tuberculosis, and 23 of them were slaughtered by the owners, while the others were dealt with by the medical officer of health.

DIPHTHERIA IN LONDON.—The amount of diphtheria recorded in London during the four-weekly period ended on August 14th—namely, 1111 notified cases, which fell during the succeeding four weeks ended on Sept. 11th to 866 notified cases, has been exceeded by the returns for the like period ended on Oct. 9th when 1169 cases were notified. Whilst the weekly average of the September period was 216 cases, the average in the October period was 292; and all the sanitary districts save one were invaded, three having been free in the September period. Also, whilst four districts in the September period had upwards of 50 cases each, and an aggregate of 246, there were seven such districts in the later period, with a total of 469 attacks. As a set-off against this there were other five districts with only 17 notified cases amongst them. The 117 deaths (29 weekly) in September rose to 182 (45 weekly), in the later period, the respective case-mortality rates being 13·5 and 15·6 per cent. Thus the latter half of September and the first part of the current month furnished not only an excessive amount of diphtheria in London, but also saw the disease in a more fatal form. Matters have not tended to mend in the three weeks ending on Oct. 30th, during which 165 deaths were registered in the county of London, in addition to 57 deaths in the outer ring. In the week ended Oct. 16th, the 45 registered deaths were one below the corrected decennial average, and also a decline on the former weeks with their respective total of 49 and 53; but the cases notified numbered 351. Only 1 death occurred in infancy, and only 1 of a person aged over twenty years, 23 being of children aged from one to five years. Kensington, St. Pancras, and Lambeth sanitary areas had each 4 deaths, and Westminster, Islington, Bethnal Green, Newington, and Plumstead sanitary areas had 3 deaths each. In the suburbs 3 deaths occurred in West Ham, 5 in Hendon, and 4 in Edmonton registration districts. In the week ended on Oct. 23rd, the 55 deaths registered in London were three in excess of the corrected decennial average, 6 being of infants and 2 of persons aged over twenty years. Islington was credited with 6 deaths, Hackney and Battersea each with 5, and Camberwell with 4 deaths. The close of the week found 1057 patients suffering from the disease in London hospitals. In the outer ring, of the 16 deaths, 6 occurred in West Ham, and 4 in Hendon registration districts. Last week the number of deaths registered from diphtheria in London increased to 65, this total being 17 in excess of the corrected decennial average for the particular week. Only one death occurred in an infant, other 43 in children in the next four years of life, and not one in a person aged over twenty years. Seven deaths were credited to Poplar, 6 to St. Pancras, 5 to Bethnal-green, 4 each to Battersea, Camberwell, and Greenwich, and 3 each to Fulham, Hackney, and Plumstead sanitary areas. In the outer ring 21 deaths were registered, of which 7 belonged to West Ham, 5 to Edmonton, and 4 to Hendon Registration Districts.

THE sum received this year in aid of the amalgamated charities by the Birmingham Hospital Sunday Collection amounts to £4010 0*s.* 7½*d.*

MEDICAL DEPUTY-LIEUTENANT.—Mr. William Hamerton Jalland, F.R.C.S. Eng., of York, has been appointed a Deputy-Lieutenant by the Lord-Lieutenant of the West Riding of the county of York.

SIR SQUIRE BANCROFT has promised to give a reading in Cardiff on Dec. 3rd, in aid of the Seamen's Hospital and the Infirmary. He will also give another at Torquay on Jan. 25th, on behalf of the Torbay Hospital.

WE have received from Mr. R. B. Anderson, acting as honorary secretary of the Corporate and Medical Reform Committee, a copy of a letter sent by the committee to Dr. Glover. In this it is stated that Dr. Glover's letter was based on "entire misrepresentation" and "entire misconception" of the circular issued by the committee. We have received from Dr. Glover a letter in which he maintains the justice and accuracy of the reflection contained in his letter published in THE LANCET of Oct. 23rd, and declines further correspondence.

THERAPEUTICAL SOCIETY OF MANCHESTER.—The first meeting for the session 1897-98 was held at the Owens College on Oct. 27th, Professor D. J. Leech, president, being in the chair. Dr. J. S. Bury described a case of Toxic Symptoms following the administration of a large dose of Phenacetine, and a short discussion took place upon the toxic effects of the synthetic antipyretics. Dr. Fothergill gave a short account of the Uses of Senecio Jacobæa, and showed specimens of the plant and preparations made from it. Mr. Kirkby also forwarded an account of the mode of preparing a Liquid Extract of Senecio, which was an effective and convenient form for its administration. Dr. A. T. Wilkinson read an interesting paper upon certain desirable Additions to the Pharmacopœia which would greatly enhance its value to medical practitioners. Dr. Yonge showed a sample of Orthoform, a newly introduced local anæsthetic.

THE ANGLO-INDIAN ASSOCIATIONS.—Dr. James R. Wallace, editor of the *Indian Medical Record*, visited England not long ago for the purpose of bringing the cause of the Anglo-Indian Associations under the notice of the public in the mother country. He returned to India in September, having met with gratifying success in the carrying out of his objects, and on the 27th of that month a large number of ladies and gentlemen of the European and Anglo-Indian community assembled in the Bombay town-hall for the purpose of welcoming him back. After some introductory remarks by the Rev. Isaac F. Row, president of the association, who occupied the chair, Dr. Wallace said that in Great Britain hardly anything was known of the domiciled British community in India, meaning by that term the section of the population consisting of Europeans of every nationality and their descendants, who had made India their home. The various methods by which the condition of this community might be improved were fully explained by him to several members of Parliament in the House of Commons and to members of the Government at the India Office and the War Office. Among the points to which he especially directed attention were the exclusion of the domiciled community from imperial appointments, the raising of local regiments, and the desirability of classifying Europeans and Anglo-Indians as British in the cases where British nationality was a requisite for holding an appointment. In conclusion, four resolutions were adopted, the first of which was as follows: "Resolved that this meeting of the domiciled European and Anglo-Indian community of Bombay, held in the town-hall on Monday, Sept. 27th, 1897, cordially appreciates and approves of the various measures that have been adopted by Dr. James Robert Wallace, as the delegate of the Anglo-Indian Associations, for the advancement of the interests of the resident British community of India, by suitable representations of their cause to Parliament and to the India Office in London, and this meeting records its hearty thanks to Dr. Wallace for his disinterested and praiseworthy labours on behalf of his countrymen during the past six months in London."

BOOKS, ETC., RECEIVED.

AMERICAN MEDICAL ASSOCIATION PRESS, Chicago.
Transactions of the Chicago Pathological Society from December, 1895, to April, 1897. Vol. II. 1897.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
Air, Food, and Exercises. By A. Rabagliati, M.A., M.D., F.R.C.S. Edin. Price 5s., net.

BLACKIE AND SON, Old Bailey, London.
The Golden Galleon. By R. Leighton. Illustrated. 1898. Price 5s.
With Crockett and Bowie: A Tale of Texas. By K. Munroe. Illustrated. 1898. Price 5s.

CHAPMAN AND HALL, Henrietta-street, Covent-garden, London, W.C.
Four Poets: Poems from Wordsworth, Coleridge, Shelley, and Keats. Selected by Oswald Crawfurd. 1897. Price 3s. 6d.

CHURCHILL, J. & A., Great Marlborough-street, London.
Year-book of Pharmacy. From July 1st, 1896, to June 30th, 1897. With the Transactions of the British Pharmaceutical Conference, 1897.

COLLINI, C., Florence.
Cinquième Congrès International d'Otologie, Florence, Septembre, 1896. 1897.

GINN AND COMPANY, Boston.
The Living Substance as Such, and as Organism. By G. F. Andrews. Supplement to Journal of Morphology. Vol. XII., No. 2. 1897.

LEWIS, H. K., Gower-street, London.
Transactions of the Dermatological Society of Great Britain and Ireland. 1896-97. Vol. III. 1897. Price 5s.
The New Sydenham Society, London: Selected Essays and Monographs. Translations and Reprints from Various Sources. 1897. Vol. CLXI. Report presented to the Thirty-ninth Annual Meeting of the New Sydenham Society, held July, 1897.

LIPPINCOTT, J. B., COMPY., Henrietta-street, Covent-garden, London.
Cutaneous Medicine: A Systematic Treatise on the Diseases of the Skin. By L. A. Duhring, M.D. Part 2. Classification, Anæmias, Hyperæmias, Inflammations. Illustrated. 1898. Price 12s. 6d.
The Origin of Disease. By A. V. Meigs, M.D. Illustrated. 1897. Price 21s. net.

LIVINGSTONE, E. AND S., Teviot-place, Edinburgh.
Catechism Series. Surgery. Part 5. Price 1s. net.

LONGMANS, GREEN, AND CO., Paternoster-row, London.
Notes on Micro-Organisms Pathogenic to Man. By Surgeon-Captain B. H. S. Leumann, I.M.S. M.B. Lond. 1897. Price 3s.
A Handbook of Midwifery. By W. R. Dakin, M.D., B.S. Lond., F.R.C.P. Illustrated. 1897. Price 18s.

PHILIP, GEO., AND SON, Fleet-street, London.
English Series, No. 1. Scenes of English Life, Book I.: Children's Life. By H. Swan and V. Bétis. With a Preface by Susanna E. Hull. 1897. Price 2s. 6d.

REDWAY, GEO., Hart-street, Bloomsbury, London.
A Catechism of Palmistry. By Ida Ellis. Illustrated. 1898. Price 2s. 6d. net.
Human Magnetism; or, How to Hypnotise. By Professor Jas. Coates. Illustrated 1897. Price 5s. net.

RICHARDS, GRANT, Henrietta-street, Covent-garden, London.
The Sub-conscious Self and its relation to Education and Health. By L. Waldstein, M.D. 1897.

SAMPSON LOW, MARSTON, AND CO., Fetter-lane, Fleet-street, London.
The Guide to South Africa. 1897-98 edition. Price 2s. 6d.

SMITH, ELDER, AND CO., Waterloo-place, London, S.W.
Reference-Book of Practical Therapeutics. By various Authors. Edited by F. P. Foster, M.D. In two vol. Vols. I. and II. 1897. Price 50s.

SPOTTISWOODE AND CO., Gracechurch-street, London.
Sick-room Cookery and Hospital Diet. By Maude Earle. With notes on the Feeding of Infants. By F. C. Madden, F.R.C.S. 1897. Price 3s. 6d.

THE SAVOY PRESS, 1'5, Strand, London.
Stammering, Stuttering, and other Speech Affections: Their Causes and Cure. By W. Abbotts, M.D., M.R.C.P., M.R.C.S. Eighth edition. 1897. Price 1s.

TOWNSEND, W., AND SON, Surrey-street, Sheffield.
1797-1897. Sheffield Royal Infirmary. A brief Sketch of a Century's Work. Compiled by J. D. Leader, F.S.A., and Simeon Snell, F.R.C.S. Edin. 1897.

UNWIN, T. FISHER, Paternoster-square, London.
Hugh Wynne. By S. W. Mitchell, M.D. Illustrated. 1897. Price 6s.

Chemistry for Photographers, by Chas. F. Townsend, F.C.S., F.R.P.S.; illustrated (Dawbarn and Ward, Farringdon-avenue, London). price 1s. net.—The Journal of Mental Science, October, 1897 (J. & A. Churchill, London, 1897), price 5s.—Transactions of the American Pediatric Society, Eighth Session, held in Montreal, May, 1896; edited by F. M. Crandall, M.D.; Vol. VIII., reprint, 1896.—Statistical Tables of the Patients under Treatment in the Wards of St. Bartholomew's Hospital during 1896 (C. Skipper and East, Great Tower-street, London, E.C., 1897).—University of London: the Calendar for the Year 1897-98, and the Revised Regulations for 1899; official copy (Eyre and Spottiswoode, London, 1897), price 5s. net.—Annual Report of the Board of Health of the Health Department of the City of New York for the Year ending Dec. 31st, 1896 (The Martin B. Brown Company, New York, 1897).—The Professional Pocket-book for 1898, containing three parts; leather case (Rudall, Carte, and Co., Berners-street, London, W.)—Atti della R. Accademia delle Scienze Mediche in Palermo, per l'Anno 1896-1897 (Giornale di Sicilia, Palermo). — Magazines, &c., for November: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Sunday Hours, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Chapman's Magazine, Myra's Journal, Pall Mall Magazine, Windsor Magazine, Cornhill Magazine, Blackwood's Magazine, Pearson's Magazine, English Illustrated Magazine, Knowledge, and Humanitarian.

Appointments.

Successful Applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ALDRIDGE, ARTHUR WM., M.B., B.S. Durh., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Obstetric and Ophthalmic House Surgeon to the Queen's Hospital, Birmingham.

ANNESLEY, J. ST. JOHN, M.D., M.Ch. Irel., has been appointed Medical Officer to the Derrylin District, Lisnaskea Union, County Fermanagh.

BUCHAN, J. J., Fifth-year Student, has been appointed a Clinical Clerk to the Woodilee Asylum, Lenzie, near Glasgow.

CARRE, HENRY, JUN., L.R.C.P., L.R.C.S. Irel., has been appointed Junior Assistant Physician, Woodilee Asylum, Lenzie, near Glasgow.

COLLIER, R. S., M.R.C.S., L.R.C.P., has been appointed a House Physician to the General Infirmary, Leeds.

DOBSON, J. F., M.R.C.S., L.R.C.P., has been appointed a House Surgeon to the General Infirmary, Leeds.

FLETCHER, JAMES, M.B., C.M., D.P.H. Aberd., has been appointed Medical Officer for the Lightburn Joint Hospital for Infectious Diseases, Shettlestone, near Glasgow.

GOODWIN, A. G., L.F.P.S. Glasg., has been appointed a Medical Examiner to the Royal Liver Friendly Society, Liverpool, vice W. J. Ireland, deceased.

GREGG, J. L., M.B., B.S. Univ. N.Z., has been appointed a Public Vaccinator at Manuherika, New Zealand.

HARRISON, W. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the district of Georgetown, South Australia.

HARTLEY, J. V., M.R.C.S., L.R.C.P., has been appointed a House Surgeon to the General Infirmary, Leeds.

HONE, F. S., M.B., B.S. Adel., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of Morphett Vale and Noarlunga, South Australia.

JOHNSON, C. H., M.B., C.M. Edin., has been appointed Officer of Health for North Colac Shire, Victoria, South Australia, vice R. A. A. Manly, resigned.

JOHNSTON, J. C., M.B., Ch.M. Edin., has been appointed a Public Vaccinator for Queenscliff, Victoria, Australia, vice J. H. Browning.

JOSKE, A. S., M.B., Ch.B. Melb., has been appointed a Member of the Medical Board of Victoria, Australia.

JUTTNER, F. J. E., M.B., Ch.B. Melb., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the district of Tanunda, South Australia.

LAIDLAW, D. F., M.B., Ch.M. Edin., has been appointed Medical Superintendent for the Hamilton Hospital, Victoria, Australia.

LEONARD, ROBERT CECIL, M.B., B.S. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon to the Bristol Dispensary.

LORD, CYRIL COURTENAY, B.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to the Queen's Hospital, Birmingham.

MCCREEKRY, J. V., L.R.C.S. Irel., has been appointed a Member of the Police Medical Board of Victoria, Australia, vice R. Youl.

MACFARLANE, A. M., M.B., Ch.M. Melb., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the district of Robe, South Australia.

MCGOWAN, R., L.F.P.S. Glasg., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the District of Port Gawler, South Australia.

MACLACHLAN, D. A., L.F.P.S. Glasg., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the districts of Crafers and Stirling, South Australia.

MAHER, J. P., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the district of Mount Crawford, South Australia.

MAIN, H. F., M.B., Ch.B. Melb., has been appointed Officer of Health for Metcalfe Shire, Victoria, Australia.

MEADE, N. G., M.R.C.S., L.R.C.P., has been appointed a House Physician to the General Infirmary, Leeds.

MEIKLE, A. J., M.D. Edin., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of Rapid Bay and Yankalilla, South Australia.

MOORHOUSE, C. H., M.B., Ch.B., has been appointed Resident Obstetric Officer to the General Infirmary, Leeds.

MORIER, C. G. D., L.K.Q.C.P., L.R.C.S. Irel., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the District of Truro, South Australia.

PHILLIPS, CHARLES MORLEY, M.D. Brux., L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon to the Bristol Dispensary.

POOLER, E. L., M.D., Ch.M. Dubl., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Quorn Corporation and radius of fifteen miles, South Australia.

POPHAM, F. W. H., L.R.C.P. Edin., M.R.C.S., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of Gawler Corporation and Munnopara West, South Australia.

PROCTOR, J. S., L.K.Q.C.P., L.R.C.S. Irel., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of South Rhine and Tungkillo, South Australia.

ROBINSON, S. VERNON, Fifth-year Student, has been appointed a Clinical Clerk to the Woodilee Asylum, Lenzie, near Glasgow.

ROSSETTI, F., M.D. Pisa, has been appointed a Public Vaccinator at Ross, New Zealand.

SHADBOLT, L. L., M.B., Ch.B. Adel., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of Terowie and Wonna (Hundreds of), South Australia.

SHAND, H. M., M.D. Aberd., L.R.C.S. Edin., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of Goolwa Corporation and Port Elliott, South Australia.

SHONK, W. V., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of Onaunga (ex-aborigines) and Strathalbyn, and Strathalbyn Corporation, South Australia.

SIMONS, C. N., L.R.C.S. Irel., L.S.A. Lond., has been appointed Officer of Health for Bright Shire, Victoria, Australia, vice J. F. Wilkinson, resigned.

SMITH, O. W., M.D., Ch.M. Edin., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of Clare and Stanley, South Australia.

SOUTER, C. H. J., M.B., Ch.M. Aberd., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of Balaklava and Dalkey, South Australia.

SOUTER, J. F., M.B., Ch.M. Aberd., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the District of East Torrens, South Australia.

STEVENSON, J. R., M.B., Ch.M. Edin., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of Coglin, Petersburg Corporation, and Yongala, South Australia.

STRANGMAN, C. L., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of Orroroo, Coomooroo, Erskine, Black Rock Plain, and Pekina, South Australia.

STUART, G. G., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Health Officer for the West Devon District, Tasmania, vice McCall, resigned.

THOMAS, J. T., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Camborne Public Dispensary.

TIDSWELL, F., M.B., Ch.M. Syd., has been appointed Principal Assistant Medical Officer to the Government of New South Wales and Microbiologist to the Board of Health.

TOLL, J. T., L.R.C.P. Edin., M.R.C.S., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of Queenstown and Alberton Rosewater, and Corporation of Semaphore, South Australia.

VEALE, H., L.S.A., has been appointed a Resident Medical Officer at the Ida Hospital, Leeds.

WILLMORE, W. SOUTHWICK, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Physician to the Queen's Hospital, Birmingham.

WOODS, G., L.K.Q.C.P., L.R.C.S. Irel., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the District of Kondoparinga, South Australia.

WOOLLEY, G. T., M.R.C.S., has been appointed a Public Vaccinator for Castlemaine, Victoria, Australia, vice G. M. Reid.

YEATMAN, J. W., M.R.C.S., L.S.A. Lond., has been appointed a Medical Officer for the Destitute Poor and Aborigines within the Districts of Hall, Saddleworth, and Waterloo, South Australia.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRITISH GENERAL HOSPITAL.—House Surgeon for three years. Salary £120 per annum. Board, residence, &c., provided in the house.

CAMBRIDGESHIRE, &C., LUNATIC ASYLUM, at Falbourn, near Cambridge.—Assistant Medical Officer, unmarried. Salary £140 per annum, with board, lodgings, and attendance, in the Asylum. Applications to the Clerk to the Visitors, Cambridge.

CATERHAM ASYLUM, Caterham, Surrey.—Assistant Medical Officer. Salary £120, rising, at the discretion of the Committee, to £150, with board, lodging, attendance, and washing, subject to statutory deduction. Applications to the Chief Office of the Board, Norfolk-street, Strand, London.

CORPORATION OF CALCUTTA, Bengal, India.—Health Officer to the town of Calcutta for five years. Salary of not less than 1200 rupees and not more than 1500 rupees a month, with reasonable horse-allowance for out-door inspection, not exceeding 100 rupees a month. Applications to Mr. W. R. Macdonald, Secretary to the Corporation.

COUNTY BOROUGH OF SALFORD.—Medical Officer of Health for Salford. Salary £900 per annum. Applications to the Town Clerk, Town Hall, Salford.

DENTAL HOSPITAL OF LONDON AND LONDON SCHOOL OF DENTAL SURGERY, Leicester-square.—Demonstrator.

GREENWICH UNION INFIRMARY.—Second Assistant Medical Officer, unmarried. The appointment will terminate on Dec. 25th, 1898. Salary £80 per annum, with board, lodging, washing, and attendance in the Infirmary, and £3 per annum in lieu of beer. Applications to the Clerk to the Guardians, Union Offices, Greenwich, S.E.

HARTISMERE UNION, Suffolk.—Medical Officer and Public Vaccinator, Gislingham District. Salary at the rate of £80 per annum, exclusive of vaccination and such other fees as are allowed by the Local Government Board. These average about £25 per annum. Applications to the Clerk, Board-room, Eye, Suffolk.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Surgeon to Out-patients (non-resident) for six months. Salary 25 guineas.

HOSPITAL FOR WOMEN, Soho-square, London.—House Physician for six months. Salary £50 for that period.

INFIRMARY FOR CONSUMPTION AND DISEASES OF THE CHEST AND THROAT, 26, Margaret-street, Cavendish-square, London.—Physician in Ordinary.

KING'S COLLEGE, London.—Assistant Demonstrator in the State Medicine Laboratories. Applications to Professor W. R. Smith, King's College, Strand, W.C.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officers at the Park Fever Hospital, Hither-green, Lewisham, S.E., unmarried. Salary £160 first year, £180 the second year, and £200 the third and subsequent years of service, with board, lodging, attendance, and washing, subject to statutory deductions. Applications to the Clerk to the Board, Norfolk House, Norfolk-street, Strand, W.C.

MIDDLESEX HOSPITAL, W.—Surgical Registrar.

NORTH EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch.—House Physician for six months. Salary at the rate of £50 per annum. Applications to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

PARISH OF ST. LEONARD, Shoreditch E.—Second Assistant Medical Officer for the Infirmary, Hoxton-street, N., for three months. Salary at the rate of £60 per annum, with rations, washing, and furnished apartments in the infirmary. Applications to the Clerk to the Guardians, Clerk's Office, 213, Kingsland-road.

ROYAL SOUTH HANTS INFIRMARY, Southampton.—Assistant House Surgeon for six months. Board and lodging provided, and an honorarium of £10 given conditionally.

ROYAL VICTORIA HOSPITAL, Bournemouth.—House Surgeon. Salary £80 per annum, with board.

UNIVERSITY OF GLASGOW.—Examinership in Anatomy. Applications to the Secretary, 91, West Regent-street, Glasgow.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea.—Assistant Physician to the Out-patients, for two years. Also Physician to the In-patients.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon for six months. Board, lodging, and washing in the hospital provided.

Births, Marriages, and Deaths.

BIRTHS.

CORBIN.—On Nov. 2nd, the wife of E. R. St. Clair Corbin, M.B. Lond., M.R.C.S. Eng., Merivale, Beckenham, of a daughter.

FERGUSON.—On Nov. 2nd, at Elm-grove, Calne, the wife of R. S. Ferguson, M.B., of a son.

HEFFERNAN.—On Oct. 25th, at Grove House, De la Warr-road, Bexhill, the wife of Harold Hilton Heffernan, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

HILLS.—On Oct. 26th, the wife of A. Phillips Hills, M.R.C.S. Eng., F.S.Sc., at Carlton House, Prince of Wales-road, Battersea-park, S.W., of a son (John Fletcher Twycross).

RICKETTS.—On Oct. 27th, at The Warren, Greenhithe, Kent, the wife of Thomas Frank Ricketts, M.D., of a daughter.

STEWART.—On Oct. 25th, at York House, Fulham-road, S.W., the wife of Eland Stewart, L.R.C.P. Lond., M.R.C.S., of a son.

MARRIAGES.

MARTIN—CAMPBELL.—On Oct. 26th, at St. Giles's Cathedral, Edinburgh, John L. Martin, M.B., C.M., Chelmsford, Essex, to Matilda, second daughter of Alex. D. Campbell, Bellevue-crescent.

DEATHS.

BOOTH.—On Oct. 31st, at Westfield-terrace, Aberdeen, Jas. Booth, M.D., M.R.C.S., in his 79th year.

BURTON.—On Oct. 31st, at Salisbury-road, Hove, Brighton, Edward John Burton, M.D., Surgeon-Major, late Army Medical Department.

DUFFEY.—On Oct. 13th, 1897, at Jamaica, of yellow fever, aged 25 years, George Allan, Lieutenant 1st Battalion the West India Regiment, elder son of Sir George Duffey, M.D., President of the Royal College of Physicians of Ireland.

GILBORNE.—On Oct. 28th, at Fairlawn, Folkestone, Surgeon-General R. Gilborne, J.P., late of the 89th Princess Victoria's Regiment and of the 6th Dragoon Guards (the Carabiniers), aged 73.

GILLESPIE.—On Oct. 31st, at Sir George Bowles's Hospital, Butleigh, suddenly, William Henry Gillespie, L.R.C.P., L.R.C.S. Irel., aged 50 years.

MACKINNON.—On Oct. 28th, 1897, at Evelyn-gardens, S.W., aged 67, Surgeon-Major-General W. A. Mackinnon, K.C.B., Hon. Surgeon to the Queen, late Director-General Army Medical Department.

PHILLIPS.—On Oct. 27th, at 2, Spital-square, George Bagster Phillips, M.R.C.S., L.M., L.S.A., aged 83.

SHEPPARD.—On Oct. 28th, at Randolph Lodge, West Worthing, Edgar Sheppard, M.D., D.C.L., late Professor of Psychological Medicine, King's College, London, aged 78 years.

STOCKWELL.—On Nov. 2nd, at 7, Queen's-parade, Bath, Thos. Goldesbrough Stockwell, F.R.C.S., L.R.C.P., L.S.A., aged 74.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY (10th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), ing's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.).

THURSDAY (11th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.).

FRIDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (13th).—Royal Free (9 A.M. and 2 P.M.), Middlesex, (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (8th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Clinical Evening. Dr. A. E. Sansom (President): Two Cases of Mitral Stenosis.—Dr. W. S. Colman: A Child with Cretinoid Physique without Mental Defect.—Dr. W. Carr: Sporadic Cretinism Cured by Thyroid Extract.—Mr. C. Mansell Moullin: Two Cases in which Inoperable Tumours have almost disappeared under the Administration of Coley's Fluid.—Dr. F. de H. Hall: Case of Obesity.—Mr. G. Templeton: Case of Multiple Subcutaneous Tumours.—Mr. W. H. Battle: Congenital Syphilitic Affection of the Knee in the Adult.

TUESDAY (9th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Papers:—Mr. P. J. Freyer: Obscure Cystic Tumour of the Bladder containing Two Calculi, Successful Removal by Suprapubic Cystotomy.—Mr. F. Eve: On Mesenteric Cysts, with Two Cases in Young Children; Operation.

WEDNESDAY (10th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus, E.C.).—Papers:—Dr. Herman: Pruritus Vulvæ.—Dr. F. J. Smith: Medical Hæmorrhage.

SOUTH-WEST LONDON MEDICAL SOCIETY (Wandsworth Town Hall).—8.30 P.M. Paper:—Mr. P. J. Freyer: Stone in the Bladder, Symptoms and Modern Methods of Diagnosis, the Modern Instruments employed in Litholapaxy, being a Review of 900 Operations for Stone by all Methods.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases and Specimens will be shown by Dr. J. Donelan, Dr. J. B. Ball, Mr. W. R. H. Stewart, Mr. M Agar, Dr. J. W. Bond, Mr. W. G. Spencer, Dr. W. Hill, Mr. M. Yearsley, Dr. J. Horne, Dr. S. Spicer, Mr. E. W. Roughton, Dr. H. Tilley, Mr. W. Wingrave, and Dr. Pegler.

THURSDAY (11th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-sq., W.).—8 P.M. Card Specimens. 8.30 P.M. Papers:—Mr. C. Wray: The probable Rôle of Heredity in the Development of Myopia and the way in which it is Modified by Disease.—Surgeon-Capt. H. Herbert: Some Matters of Interest in Cataract Extraction.

BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Specimens will be shown by Mr. Bowerman Jessett and Mr. O'Callaghan. Adjourned discussion on Mr. Keith's paper on Dysmenorrhœa. Paper:—Dr. J. A. Shaw Mackenzie: Hæmorrhagic Endometritis.

FRIDAY (12th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. A. H. Tubby and Mr. R. Jones: Some Cases of Pott's Curvature of the Spine treated by Immediate Reduction of the Deformity (followed by lantern demonstration of the method).—Mr. A. Pearce Gould: A Case of Acute Intestinal Obstruction relieved by Operation, Death from Intestinal Toxæmia on the Ninth Day after Operation.

LECTURES, ADDRESSES, DEMONSTRATIONS, ETC.

MONDAY (8th).—LONDON POST-GRADUATE COURSE.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Mr. G. C. Wilkin: Nasal Polypi.

TUESDAY (9th).—LONDON POST-GRADUATE COURSE.—Bethlem Hospital, 2 P.M., Dr. Craig: Alcoholic Insanity; Insanity with Syphilis; Insanity with Organic Brain Disease.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. Abraham: Scabies.

HOSPITAL FOR NERVOUS DISEASES (73, Welbeck-street).—4.30 P.M. Dr. T. D. Savill: Cases of Paraplegia.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Dr. Tooth: On Spinal Cord Lesions (with lantern demonstration).

WEDNESDAY (10th).—LONDON POST-GRADUATE COURSE.—Parkes Museum, Margaret-st., W., 4.30 P.M., Prof. A. Wynter Blyth: Sanitary Appliances.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. P. Kidd: Pleurisy.

EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Dr. F. Willcocks: Clinical Cases from the Wards. (Post-Graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. A. Whitfield: Medical Cases.

THURSDAY (11th).—ROYAL COLLEGE OF PHYSICIANS (Examination Hall, Savoy, W.C.).—5 P.M. Dr. Pavy: Points connected with the Pathology and Treatment of Diabetes. (Supplementary to the Croonian Course delivered in 1894.)

LONDON POST-GRADUATE COURSE.—Central London Sick Asylum, Cleveland-st., W., 5.30 P.M., Mr. R. Barwell: Clinical Lecture.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Colman: Demonstration of Selected Cases.

FRIDAY (12th).—LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Actinomycosis and Glanders.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

THE INFANTS' ASYLUM ON RANDALL'S ISLAND, NEW YORK CITY.

IN *Pediatrics* of Sept. 1st there are some strong remarks on the management of the Infants' Asylum on Randall's Island. The fact that it is unhealthy in a high degree to herd young children together in large numbers has been conclusively proved and emphasised time after time. The foundling hospitals in Italy and some of the children's hospitals in France (notably l'Hôpital Trousseau in Paris) are conspicuous examples of the dangers attending this course, and doubtless there are in England some instances of a similar kind. *Pediatrics* says: "From an investigation of the affairs of the 'Infants' Asylum at Randall's Island,' which until a few months ago was under the control of the city, the truth has been made public that the mortality among the infants reaches the fearful rate of nearly 90 per cent. Before the institution was handed over to the management of the Commissioners of Charities matters were even in a worse state than now, and it was stated on the authority of the medical board that to enter it under the age of six months was certain death." From the foregoing account it will be gathered that the asylum at Randall's Island is in almost as bad a sanitary state as are Italian foundling hospitals. However, it is satisfactory to learn that vigorous efforts towards reform are to be made by the Charity Commissioners, assisted by the mayor, and without doubt now that public opinion has been aroused the institution will be placed on a better sanitary footing.

C. S. J.—Colonial appointments are in the gift of the Colonial Office. Application should be made to the private secretary of that office before the end of the first quarter in any year. The applications for these appointments greatly exceed the vacancies. The posts of medical visitors in lunacy are in the gift of the Lord Chancellor. Certain appointments are also made by the Local Government Board and the Board of Trade, to each of which bodies our correspondent should apply.

DIGRAPHIC COPY-BOOKS.

WE have received from Dr. Robert B. McVittie, of Dublin, a specimen of a series of copy-books designed with a view of teaching longhand and phonography simultaneously. Shorthand now occupies a prominent place in the learned professions, but as a rule the subject is not taken up by the student until that period of his life when, owing to the multiplicity of the subjects of his professional curriculum, he can ill spare the time. Practically the mental effort required to trace the preliminary characters of the phonographic alphabet is little more than that required for the drawing of pothooks and hangers, and long before a child has gone through the complete series of books he should, with intelligent teaching, be able to use phonography with some degree of utility. The books are published by M'Caw, Stevenson, and Orr, Loopbridge, Belfast, and by Sir Isaac Pitman and Sons, London.

INSTRUCTION IN ETHICS.

To the Editors of THE LANCET.

SIRS,—I have sometimes thought it would be a good thing if a chair of medical ethics could be established in our leading schools of medicine. It seems that at present no teaching of medical morals is provided for the rising generation of practitioners, and yet to most thoughtful minds such an institution would surely commend itself. It may not be out of place at this particular season to consider how much the plain teaching of professional morality would have effect in giving a healthy tone to the eager but undisciplined energies of those entering on the threshold of professional life. Most of us whose lives have been given to the practice of the healing art can look back on the past with very chequered feelings as regards the nobility of our calling; suffice it to say that in spite, or as a natural sequence, of much that has been mooted touching the proprieties of professional conduct the general outlook is decidedly unpromising. I venture to affirm that the professional tone fifty or sixty years ago was higher than it is at present. It may be true that competition was less keen, that life was generally more pleasant and easy, and that the general strain was less severely felt; but still the code of professional honour and integrity was more generally recognised and respected. The rush and struggle of modern times, in which the strong and unprincipled tread down the weak and self-respecting, the gladiatorial combats which make and mar our rising, pushing race, give to the holy calling of medicine a sanguinary hue. As a medical man remarked to me the other day, it is a throat-cutting business. Let me instance a few examples. In the town where I live a medical man had engaged a residence in a favourable locality and some distance from any other practitioner. He had scarcely taken the house before two other professional "brethren" applied to the landlord for it, offering a much higher rent with other pecuniary advantages to secure possession. One of these lives a mile off, and the other half a mile from the spot. Another medical man makes a custom of buying practices for the sole purpose of selling them after a year or two. In a country practice I once held a man in a neighbouring town placed an unqualified assistant, whom he dubbed "doctor," in the village eight miles from his own residence to steal my practice from me. He used to call on my patients, stating I was about to leave and asking for their support. He also canvassed my clubs, offering lower terms. I brought the matter before the General Medical Council and they replied they could take no action as he was not registered. Such instances of unprofessional conduct are perhaps known to most of your readers; I need hardly enlarge upon them. In attacking the abuse of medical charities and club organisations we are making clean the outside of the platter while within it is full of uncleanness and abomination. But I have trespassed too much on your space. Excuse, Sirs, the opinions of,

Yours faithfully,

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A DISCUSSION lately took place before the Hexham sanitary authority on the propriety of issuing certain rules for the guidance of those responsible for the management of cases of infectious disease. The medical officer of health disapproved the indiscriminate issue of such instructions in a town where everybody is supposed to have a medical man to guide them in such circumstances, supported—as he should be—by the medical officer of health. The actual rules sent us are defective and would lead in our view to mischief. The chief duty of a parent or guardian with a case possibly infectious is to send immediately for a medical man, on whom should rest the responsibility of instructions as to isolation and disinfection. There is not a word to this effect in the rules, whereas much that would be misunderstood and give the readers a notion that they were doing right is contained in them. We agree that some plain rules, to be drawn up by the medical practitioners and medical officers of health, might with advantage be prepared and distributed by the practitioner in attendance at his discretion; but they should be simple and few, and of such a nature as to assume the presence and supervision of the practitioner. We think the sanitary authority did well to be guided in this matter by their medical officer of health.

THE OVERCROWDING OF THE PROFESSION: A TIME-HONOURED COMPLAINT.

A CORRESPONDENT writes: "Looking through an old volume of the *Spectator* some time ago I came across an article by Addison on the overcrowding of the professions. It is dated March 24th, 1710. I was surprised to find that this supposed modern question is at least nearly 200 years old, and as the paper may not be widely known I give one or two quotations from it:—

"I am sometimes very much troubled, when I reflect upon the three great professions of divinity, law, and physic; how they are each of them overburdened with practitioners, and filled with multitudes of ingenious gentlemen that starve one another. * *

"If we look into the profession of physic, we shall find a most formidable body of men. The sight of them is enough to make a man serious, for we may lay it down as a maxim, that when a nation abounds in physicians it grows thin of people. ..... This body of men may be described like the British army in Cæsar's time. Some of them slay in chariots, and some on foot. If the infantry do less execution than the charioteers, it is because they cannot be carried so soon into all quarters of the town, and dispatch so much business in so short a time. Besides this body of regular troops, there are stragglers, who, without being duly listed and enrolled, do infinite mischief to those who are so unlucky as to fall into their hands..... When I consider how each of these professions are crowded with multitudes that seek their livelihood in them.....I very much wonder at the humour of parents, who will not rather choose to place their sons in a way of life where an honest industry cannot but thrive, than in stations where the greatest probity, learning, and good sense, may miscarry. How many men are country curates, that might have made themselves Aldermen of London, by a right improvement of a smaller sum of money than what is usually laid out upon a learned education? A sober frugal person, of slender parts and a slow apprehension might have thrived in trade, though he starves upon physic; as a man would be well enough pleased to buy silks of one whom he would not venture to feel his pulse..... The misfortune is, that parents take a liking to a particular profession, and therefore desire their sons may be of it: whereas in so great an affair of [illegible] they should consider the genius and abilities of their [illegible] more than their own inclinations. It is the gre[illegible] of a trading nation, that there are few in it so [illegible] who may not be placed in stations of life, which [illegible] opportunity of making their fortunes. A well [illegible] is not, like law, physic, or divinity, to be ove[illegible] but on the contrary flourishes by multitudes, [illegible] to all its professors.

"Fleets of merchantmen are so many squa[illegible] that send our wares and manufactures in [illegible] world, and find out chapmen under both the[illegible]

Mr. L. Moscrop.—We do not recommend indi[illegible] treatment.

THE BURN OF SEALING-WAX: WANTE[illegible]

To the Editors of THE LANCET.

SIRS,—Some time ago I read of a French chemis[illegible] hand with sealing-wax and found accidentally that [illegible] compound, the nature of which I have forgotten, gave [illegible] relief when applied to the affected part. Having recently ha[illegible] aggravated case I would be grateful to any of your correspondents [illegible] refresh my memory as to what the remedy was.

I am, Sirs, yours faithfully,

JOHN R. WILLIAMS, M.B. Edin.

Bryn Hyfryd, Penmaenmawr, Oct. 30th, 1897.

THE jury of the Great International Exhibition at Brussels have awarded "Le Grand Prix" to Messrs. J. S. Fry and Sons, Limited, for their pure concentrated cocoa and other specialities.

LUMINOUS LIFE-SAVING APPLIANCES.

A JOURNEYMAN tile-maker of Compiègne named Bouraine, who is an active member of the Oise Humane Society, has invented a system for illuminating life-buoys, rafts, and other appliances for saving life from drowning, which has recently undergone successful trial at Compiègne, Rouen, and also in Paris. The invention consists in the attachment of small incandescent electric lamps to the appliance, one or more according to size, the illumination being maintained by means of an accumulator which is said to be capable of acting for seven or eight hours. As soon as the buoy or raft touches the water an indiarubber bladder moves a lever, and the circuit being thus established the lamps at once become luminous. In concluding his notice the writer in a Parisian medical journal makes the following observation: Steam vessels at the present time are all fitted with the electric light, and it would be easy to keep the small accumulators constantly charged. If only M. Bouraine's ingenious invention had been available in the tragical shipwreck of the *Drummond Castle*, what a number of valuable lives could have been saved.

REV. J. E. LONDON AND THE MEDICAL PROFESSION IN BRITISH GUIANA.

IT was our duty some six months ago to point out that a Georgetown paper, in referring to the impending presence of the Rev. "Dr." J. E. London at a banquet given to Lord Lister by his junior colleagues, had miscalculated Mr. London's importance. The Georgetown paper seemed to think that to be invited to the dinner was an especial social and scientific honour, whereas all Lord Lister's house surgeons and clinical clerks were bidden to the feast. And inasmuch as such a view would tend to exalt Mr. London, a King's College man, at the expense of other medical men in British Guiana not qualified to be invited, we pointed out that it behoved Mr. London publicly to correct the false impression. Did Mr. London ever do this? We have recently had sent to us a copy of the *British Guiana Congregational Magazine*, which contains under the title of "Echoes from Afar" Mr. London's speech at the "Royal Café, Regent-street, London, W.C.," on the occasion of the dinner in question. Appended to this speech is an address of congratulation to Lord Lister, signed by certain medical men in British Guiana. Of these gentlemen we now desire to ask as follows. Did they know that Mr. London was going to incorporate into his speech, made presumably on their behalf, a eulogy of himself and his "colleagues, Dr. Deane and Dr. Wills, in our Public Dispensary and private practice"? Is this particular Public Dispensary notably the home of Listerian principles and antiseptic surgery?

Of *A Subscriber* will consult the Students' Number of THE LANCET, p. 513, published on Aug. 21st, 1897, he will find a list of the benevolent agencies of the profession, together with all necessary particulars.

THE CLIMATE OF SOUTH AFRICA AND PHTHISIS.

To the Editors of THE LANCET.

SIRS,—Will any of your readers inform me if they consider it advisable to send a man suffering from phthisis in the early stage to [illegible]rica, and if so, what place they would recommend in preference, the patient is a middle-aged man and would like to undertake light employment if his health permitted. Any information from your readers acquainted with South Africa would be acceptable. Thanking you in anticipation for publishing this I remain, Sirs, yours faithfully,

C. G. BATTISCOMBE.

[illegible]dary Cray, Kent, Oct. 21st, 1897.

[illegible] such article has appeared in our columns. Rome has undergone "improvement" from an "improved water-supply," [illegible]supply has at all times been superlatively good—a [illegible]. the ancient Romans, whose fourteen magnificent [illegible]ave for centuries been represented by at least five, [illegible]n sufficient for the city's wants, and the envy [illegible]r cities for the purity of the water they bring. [illegible]m old rookeries, like the Ghetto, have been replaced by better constructed, better ventilated dwelling houses, and hygienic regulations (chiefly re-vaccination) have also contributed to heighten the standard of health. During the sittings of the Eleventh International Congress in 1894 our Special Correspondent contributed a series of articles on how to see Rome, but sanitary indications in them were merely incidental. Our correspondent will perhaps find all the information he wants on a reference to the best authorities bearing on it in Dr. Mendini's "Hygienic Guide to Rome," recently translated by Mr. Eyre, and reviewed in THE LANCET.

E. A. S.—It would be advisable that the family should not reside in the house during the alteration. The risks may be remote, but they are real. These remarks especially apply if any member of the family is of delicate health.

SURGICAL OPERATIONS ON DOGS AND CATS.

IN an interesting paper read at Manchester on Sept. 30th Professor Hobday, F.R.C.V.S., of the Royal Veterinary College, gave an account of the following operations as performed on dogs and cats: excision of the membrana nictitans, the operations for entropion, the operative treatment of hæmatoma of the ear-flap, amputation of everted rectum, amputation of limbs, laparotomy, laparo-enterotomy, ovariotomy and oöphorectomy, hysterectomy and ovaro-hysterectomy. During the last three years amputation of limbs has been performed in the College Clinique fifteen or sixteen times, one of the patients being a valuable whippet dog, both of whose forelegs were removed just below the elbow. He is now kept solely for stud purposes, and when walking has an appearance very like a kangaroo. Creolin in some form is the surgical antiseptic most commonly used in the College Clinique.

ENGLISH AS SHE IS WROTE.

THE following letters were recently addressed to a practitioner in India and have been sent by him to the *Indian Medical Record*:—

I.

To ——— ——— Esq. Medl. Practr. Respected Sir,—I am sorry that I am badly suffering by cold fever and therefore cannot come to work for 2, 3, days for which I pray your honor will not cut my pay and will excuse. I am poor man, but if you do, then I must be damn and come to work at once. Reply by bearer my maternal uncle will oblige.—Your obedient servant N. K.

II.

To Mr. Dr.———————Esq. My dear doctor saheb,—I am sorry to inform you that I am suffering from fever and coldness coming upon me like hot sun's rays falling upon a man's eyes balls. By this I am cannot attend my duty, feeling very giddy and my headache is too much paining, feeling my body all paining. Vomitions by mouth and private part are too many, and by this I am feeling too much hungry and weakness and cannot take food because every food I take becomes just like a rheumatism. Something is also rising upon my whole body like bowels. Please send effective medicine, etc.—Your, respected sir obedient servant V. V———.

These specimens of Baboo English are not unworthy of addition to the many others that have from time to time appeared in print. Nor do we reproduce them in ridicule, for there is an adventurousness about their use of the English language which commands the respect due to gallant effort.

ICHTHYOL AND GLYCERINE SUPPOSITORIES.

To the Editors of THE LANCET.

SIRS,—It is now an established fact that ichthyol is a most valuable remedy in a large number of uterine diseases, not only taken internally, but applied mixed with glycerine, which is also a valuable therapeutic agent, in the form of a vaginal tampon. There are a great many obvious disadvantages in the use of the tampon, so I have had ichthyol and glycerine suppositories for vaginal application made by Messrs. Wyley, of Coventry. They are more effective and much easier of application than the tampon, they can be used by the patient, and the speculum not being necessary they are particularly adapted for use in disorders occurring in the virgin. There is 10 per cent. of ichthyol in each suppository and they can be had in different sizes. I see no reason why they should not also be valuable for rectal medication.

I am, Sirs, yours faithfully,

J. LESLIE CALLAGHAN, L.R.C.S.Irel., L.R.C.P. Ed., L.M.

Coventry, Oct. 27th, 1897.

*** Mr. Callaghan enclosed samples of well-made suppositories of different sizes.—ED. L.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 4th, 1897.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rainfall.	Solar Radia in Vacuo	Maximum Temp. Shade	Min. Temp	Wet Bulb.	Dry Bulb	Remarks at 8.30 a.m.
Oct. 29	30·13	S.E.	...	86	65	47	47	48	Foggy
,, 30	30·12	E.	...	92	68	48	48	50	Foggy
,, 31	30·30	N.E.	...	73	59	44	46	46	Foggy
Nov. 1	30·35	E.	...	75	58	45	46	48	Foggy
,, 2	30·29	E.	...	71	52	45	45	47	Overcast
,, 3	30·23	E.	...	72	52	45	45	47	Cloudy
,, 4	30·19	E.	...	48	46	44	43	45	Overcast

During the week marked copies of the following newspapers have been received: *Newport Advertiser, Sussex Daily News, Walsall Advertiser, Bedford Times, Salisbury Journal, Lincolnshire Echo, Sheffield Telegraph, Times of India, Pioneer Mail, Glasgow Herald, Manchester Guardian, Dundee Advertiser, Devon Gazette, Midland Mail, Builder, Bromley Telegraph, Elgin Courant, North British Daily Mail, Yorkshire Post, Times of Africa, Kentish Observer, Bridgwater Independent, Leeds Mercury, West London Observer, Herald of Wales, Hereford Times, Liverpool Daily Post, East Anglian Times, Vegetarian, Bristol Times and Mirror, Worcestershire Chronicle, Hastings Observer, Bristol Mercury, Architect, Luton Reporter, North Wilts Herald, Blackburn Standard, Leicester Post, Birmingham Gazette, Lowestoft Standard, Southport Visitor, Wolverhampton Chronicle, Portsmouth Times, New York Times, Mail and Express (New York), Sanitary Record, Local Government Chronicle, Mining Journal, Reading Mercury, Weekly Free Press and Aberdeen Herald, City Press, Hertfordshire Mercury, Surrey Advertiser, Local Government Journal, St. Bartholomew's Hospital Journal, Yorkshire Herald, Lincoln Gazette, Blackburn Times, West Middlesex Herald, Scotsman, Public Health, Witney Gazette, Strathearn Herald,* &c., &c.

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WE have received from Dr. Robert B. McVittie, of Dublin, a specimen of a series of copy-books designed with a view of teaching longhand and phonography simultaneously. Shorthand now occupies a prominent place in the learned professions, but as a rule the subject is not taken up by the student until that period of his life when, owing to the multiplicity of the subjects of his professional curriculum, he can ill spare the time. Practically the mental effort required to trace the preliminary characters of the phonographic alphabet is little more than that required for the drawing of pothooks and hangers, and long before a child has gone through the complete series of books he should, with intelligent teaching, be able to use phonography with some degree of utility. The books are published by M'Caw, Stevenson, and Orr, Loopbridge, Belfast, and by Sir Isaac Pitman and Sons, London.

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A CORRESPONDENT writes: "Looking through an old volume of the *Spectator* some time ago I came across an article by Addison on the overcrowding of the professions. It is dated March 24th, 1710. I was surprised to find that this supposed modern question is at least nearly 200 years old, and as the paper may not be widely known I give one or two quotations from it:—

"I am sometimes very much troubled, when I reflect upon the three great professions of divinity, law, and physic; how they are each of them overburdened with practitioners, and filled with multitudes of ingenious gentlemen that starve one another. * *

"If we look into the profession of physic, we shall find a most formidable body of men. The sight of them is enough to make a man serious, for we may lay it down as a maxim, that when a nation abounds in physicians it grows thin of people. ..... This body of men may be described like the British army in Cæsar's time. Some of them slay in chariots, and some on foot. If the infantry do less execution than the charioteers, it is because they cannot be carried so soon into all quarters of the town, and dispatch so much business in so short a time. Besides this body of regular troops, there are stragglers, who, without being duly listed and enrolled, do infinite mischief to those who are so unlucky as to fall into their hands.....When I consider how each of these professions are crowded with multitudes that seek their livelihood in them.....I very much wonder at the humour of parents, who will not rather choose to place their sons in a way of life where an honest industry cannot but thrive, than in stations where the greatest probity, learning, and good sense, may miscarry. How many men are country curates, that might have made themselves Aldermen of London, by a right improvement of a smaller sum of money than what is usually laid out upon a learned education? A sober frugal person, of slender parts and a slow apprehension might have thrived in trade, though he starves upon physic; as a man would be well enough pleased to buy silks of one whom he would not venture to feel his pulse..... The misfortune is, that parents take a liking to a particular profession, and therefore desire their sons may be of it: whereas in so great an affair of life, they should consider the genius and abilities of their children more than their own inclinations. It is the great advantage of a trading nation, that there are few in it so dull and heavy, who may not be placed in stations of life, which may give them an opportunity of making their fortunes. A well regulated commerce is not, like law, physic, or divinity, to be overstocked with hands; but on the contrary flourishes by multitudes, and gives employment to all its professors.

"Fleets of merchantmen are so many squadrons of floating shops, that send our wares and manufactures in all the markets of the world, and find out chapmen under both the tropics."

Mr. L. Moscrop.—We do not recommend individual practitioners or treatment.

THE BURN OF SEALING-WAX: WANTED A REMEDY.

To the Editors of THE LANCET.

SIRS,—Some time ago I read of a French chemist who burned his hand with sealing-wax and found accidentally that some chemical compound, the nature of which I have forgotten, gave him instant relief when applied to the affected part. Having recently had a most aggravated case I would be grateful to any of your correspondents to refresh my memory as to what the remedy was.

I am, Sirs, yours faithfully,

JOHN R. WILLIAMS, M.B. Edin.

Bryn Hyfryd, Penmaenmawr, Oct. 30th, 1897.

THE jury of the Great International Exhibition at Brussels have awarded "Le Grand Prix" to Messrs. J. S. Fry and Sons, Limited, for their pure concentrated cocoa and other specialities.

LUMINOUS LIFE-SAVING APPLIANCES.

A JOURNEYMAN tile-maker of Compiègne named Bouraine, who is an active member of the Oise Humane Society, has invented a system for illuminating life-buoys, rafts, and other appliances for saving life from drowning, which has recently undergone successful trial at Compiègne, Rouen, and also in Paris. The invention consists in the attachment of small incandescent electric lamps to the appliance, one or more according to size, the illumination being maintained by means of an accumulator which is said to be capable of acting for seven or eight hours. As soon as the buoy or raft touches the water an indiarubber bladder moves a lever, and the circuit being thus established the lamps at once become luminous. In concluding his notice the writer in a Parisian medical journal makes the following observation: Steam vessels at the present time are all fitted with the electric light, and it would be easy to keep the small accumulators constantly charged. If only M. Bouraine's ingenious invention had been available in the tragical shipwreck of the *Drummond Castle*, what a number of valuable lives could have been saved.

REV. J. E. LONDON AND THE MEDICAL PROFESSION IN BRITISH GUIANA.

IT was our duty some six months ago to point out that a Georgetown paper, in referring to the impending presence of the Rev. "Dr." J. E. London at a banquet given to Lord Lister by his junior colleagues, had miscalculated Mr. London's importance. The Georgetown paper seemed to think that to be invited to the dinner was an especial social and scientific honour, whereas all Lord Lister's house surgeons and clinical clerks were bidden to the feast. And inasmuch as such a view would tend to exalt Mr. London, a King's College man, at the expense of other medical men in British Guiana not qualified to be invited, we pointed out that it behoved Mr. London publicly to correct the false impression. Did Mr. London ever do this? We have recently had sent to us a copy of the *British Guiana Congregational Magazine*, which contains under the title of "Echoes from Afar" Mr. London's speech at the "Royal Café, Regent-street, London, W.C.," on the occasion of the dinner in question. Appended to this speech is an address of congratulation to Lord Lister, signed by certain medical men in British Guiana. Of these gentlemen we now desire to ask as follows. Did they know that Mr. London was going to incorporate into his speech, made presumably on their behalf, a eulogy of himself and his "colleagues, Dr. Deane and Dr. Wills, in our Public Dispensary and private practice"? Is this particular Public Dispensary notably the home of Listerian principles and antiseptic surgery?

C. *A Subscriber* will consult the Students' Number of THE LANCET, p. 513, published on Aug. 21st, 1897, he will find a list of the benevolent agencies of the profession, together with all necessary particulars.

THE CLIMATE OF SOUTH AFRICA AND PHTHISIS.

To the Editors of THE LANCET.

SIRS,—Will any of your readers inform me if they consider it advisable to send a man suffering from phthisis in the early stage to South Africa, and if so, what place they would recommend in preference? The patient is a middle-aged man and would like to undertake some light employment if his health permitted. Any information on the matter from your readers acquainted with South Africa would be very acceptable. Thanking you in anticipation for publishing this letter, I remain, Sirs, yours faithfully,

C. G. BATTISCOMBE.

Rowlands, St. Mary Cray, Kent, Oct. 21st, 1897.

Dr. Wyckoff.—No such article has appeared in our columns. Rome has undergone no "improvement" from an "improved water-supply," for the water-supply has at all times been superlatively good—a bequest from the ancient Romans, whose fourteen magnificent aqueducts have for centuries been represented by at least five, more than sufficient for the city's wants, and the envy of other cities for the purity of the water they bring. Certain old rookeries, like the Ghetto, have been replaced by better constructed, better ventilated dwelling houses, and hygienic regulations (chiefly re-vaccination) have also contributed to heighten the standard of health. During the sittings of the Eleventh International Congress in 1894 our Special Correspondent contributed a series of articles on how to see Rome, but sanitary indications in them were merely incidental. Our correspondent will perhaps find all the information he wants on a reference to the best authorities bearing on it in Dr. Mendini's "Hygienic Guide to Rome," recently translated by Mr. Eyre, and reviewed in THE LANCET.

E. A. S.—It would be advisable that the family should not reside in the house during the alteration. The risks may be remote, but they are real. These remarks especially apply if any member of the family is of delicate health.

SURGICAL OPERATIONS ON DOGS AND CATS.

IN an interesting paper read at Manchester on Sept. 30th Professor Hobday, F.R.C.V.S., of the Royal Veterinary College, gave an account of the following operations as performed on dogs and cats: excision of the membrana nictitans, the operations for entropion, the operative treatment of hæmatoma of the ear-flap, amputation of everted rectum, amputation of limbs, laparotomy, laparo-enterotomy, ovariotomy and oöphorectomy, hysterectomy and ovaro-hysterectomy. During the last three years amputation of limbs has been performed in the College Clinique fifteen or sixteen times, one of the patients being a valuable whippet dog, both of whose forelegs were removed just below the elbow. He is now kept solely for stud purposes, and when walking has an appearance very like a kangaroo. Creolin in some form is the surgical antiseptic most commonly used in the College Clinique.

ENGLISH AS SHE IS WROTE.

THE following letters were recently addressed to a practitioner in India and have been sent by him to the *Indian Medical Record*:—

I.

To ——— —— Esq. Medl. Practr. Respected Sir,—I am sorry that I am badly suffering by cold fever and therefore cannot come to work for 2, 3, days for which I pray your honor will not cut my pay and will excuse. I am poor man, but if you do, then I must be damn and come to work at once. Reply by bearer my maternal uncle will oblige.—Your obedient servant N. K.

II.

To Mr. Dr.————Esq. My dear doctor saheb,—I am sorry to inform you that I am suffering from fever and coldness coming upon me like hot sun's rays falling upon a man's eyes balls. By this I am cannot attend my duty, feeling very giddy and my headache is too much paining, feeling my body all paining. Vomitions by mouth and private part are too many, and by this I am feeling too much hungry and weakness and cannot take food because every food I take becomes just like a rheumatism. Something is also rising upon my whole body like bowels. Please send effective medicine, etc.—Your, respected sir obedient servant V. V———.

These specimens of Baboo English are not unworthy of addition to the many others that have from time to time appeared in print. Nor do we reproduce them in ridicule, for there is an adventurousness about their use of the English language which commands the respect due to gallant effort.

ICHTHYOL AND GLYCERINE SUPPOSITORIES.

To the Editors of THE LANCET.

SIRS,—It is now an established fact that ichthyol is a most valuable remedy in a large number of uterine diseases, not only taken internally, but applied mixed with glycerine, which is also a valuable therapeutic agent, in the form of a vaginal tampon. There are a great many obvious disadvantages in the use of the tampon, so I have had ichthyol and glycerine suppositories for vaginal application made by Messrs. Wyley, of Coventry. They are more effective and much easier of application than the tampon, they can be used by the patient, and the speculum not being necessary they are particularly adapted for use in disorders occurring in the virgin. There is 10 per cent. of ichthyol in each suppository and they can be had in different sizes. I see no reason why they should not also be valuable for rectal medication.

I am, Sirs, yours faithfully,

J. LESLIE CALLAGHAN, L.R.C.S.Irel., L.R.C.P. Ed., L.M.

Coventry, Oct. 27th, 1897.

*** Mr. Callaghan enclosed samples of well-made suppositories of different sizes.—ED. L.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 4th, 1897.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Oct. 29	30·13	S.E.	...	86	65	47	47	48	Foggy
,, 30	30·12	E.	...	92	68	48	48	50	Foggy
,, 31	30·30	N.E.	...	73	59	44	46	46	Foggy
Nov. 1	30·35	E.	...	75	58	45	46	48	Foggy
,, 2	30·29	E.	...	71	52	45	45	47	Overcast
,, 3	30·23	E.	...	72	52	45	45	47	Cloudy
,, 4	30·19	E.	...	48	46	44	43	45	Overcast

During the week marked copies of the following newspapers have been received: *Newport Advertiser, Sussex Daily News, Walsall Advertiser, Bedford Times, Salisbury Journal, Lincolnshire Echo, Sheffield Telegraph, Times of India, Pioneer Mail, Glasgow Herald, Manchester Guardian, Dundee Advertiser, Devon Gazette, Midland Mail, Builder, Bromley Telegraph, Elgin Courant, North British Daily Mail, Yorkshire Post, Times of Africa, Kentish Observer, Bridgwater Independent, Leeds Mercury, West London Observer, Herald of Wales, Hereford Times, Liverpool Daily Post, East Anglian Times, Vegetarian, Bristol Times and Mirror, Worcestershire Chronicle, Hastings Observer, Bristol Mercury, Architect, Luton Reporter, North Wilts Herald, Blackburn Standard, Leicester Post, Birmingham Gazette, Lowestoft Standard, Southport Visitor, Wolverhampton Chronicle, Portsmouth Times, New York Times, Mail and Express (New York), Sanitary Record, Local Government Chronicle, Mining Journal, Reading Mercury, Weekly Free Press and Aberdeen Herald, City Press, Hertfordshire Mercury, Surrey Advertiser, Local Government Journal, St. Bartholomew's Hospital Journal, Yorkshire Herald, Lincoln Gazette, Blackburn Times, West Middlesex Herald, Scotsman, Public Health, Witney Gazette, Strathearn Herald, &c., &c.**

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Mr. F. C. Abbott, Lond.; Argentum, Lond.; Mr. E. D. E. T. Archer, Worthing; Messrs. J. and R. Archibald, Tillicoultry; Mr. T. Annandale, Edinburgh.

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T.—Mr. J. Thin, Edinburgh; Messrs. W. Thacker and Co., Lond.; Messrs. Teff and Co., Bristol; Sir W. Thomson, Dublin.

U.—*University of Pennsylvania Press*, Philadelphia.

V.—Mr. J. W. Vickers, Lond.

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V.—Vaccine Lymph Association, Lond., Secretary of.

W.—Dr. W. J. Wilson, Margate; Wonford House Hospital, Exeter; Williamson, Lond.; Dr. J. H. Waterhouse, Maltby Grange; Mr. J. T. Watts, Lond.; Mr. E. H. Worth, Gosport; Messrs. Watkins and Osmond, Lond.

Y.—Dr. H. Young, Bridgwater; Mr. J. B. Yourell, Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. J. Althaus, Lond.; A. B., Lond.; Amethyst, Lond.; Mons. J. Astier, Paris; Messrs. J. and W. Arrowsmith, Bristol; Agricola, Lond.; Æsculapius, Gipsy Hill, Assistant, Lond.; Dr. D. H. Anderson, Barrow-in-Furness; Alief Ari, East Dulwich; Annus, Lond.; Adjuvans, Lond.; Alpha, Sheffield.

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